Personality, antisocial behaviour and risk perception in adolescents.

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PERSONALITY, ANTISOCIAL BEHAVIOUR AND RISK PERCEPTION IN ADOLESCENTS

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ABSTRACT

The aim of this study was to both replicate past studies which have examined Eysenck's theory of criminality in normal children and to advance our knowledge concerning personality, conformity and the perception of risk in deviant and non-deviant adolescents.

Questionnaires were administered to 1282 secondary school children between the ages of 13 to 16 from three different schools. The tests were comprised of the Junior Eysenck Personality Questionnaire, the self-report Antisocial Behaviour Questionnaire and a Stereotyping Test. Six cartoons depicting persons committing various illegal acts were shown. The subjects answered questions measuring the amount of impulsivity, thrill-seeking, criminality and risk perceived. A paragraph form of risk and criminality assessment was also administered.

The results showed that personality (P, E, N & L) significantly correlated with deviancy and antisocial behaviour in support of Eysenck's theory. High N and L scorers perceived most risk while high P scorers perceived least risk. E seemed unaffected by risk on the perception measure. Criminality was found to be negatively correlated with risk perception. Sex and socioeconomic differences were also noted. Surprisingly, no predominant personality differences were found on the Stereotyping Test. Implications from this study were made concerning the detection of children at risk with respect to future delinquency.

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There was once a man who aspired to be the author of the general theory of holes. When asked 'What kind of hole - holes dug by children in the sand, holes dug by gardeners, holes made by roadmakers?' he would reply indignantly that he wished for a general theory that would explain all of these. He rejected 'ab initio' the pathetically common-sense view that of the digging of different holes there are quite different kinds of explanation to be given; why then, he would ask, do we have the concept of a hole? ...

MacIntyre, A.

CHAPTER 1

1.1 EYSENCK'S THEORY OF PERSONALITY

H. J. Eysenck's theory of personality, outlined initially in 1947, has been well publicised and documented. Over the past thirty years numerous experiments have been published which have come to support much of his theory.

Based on the writings of a Greek physician, Galen, who put forward a view that there were four distinct personality types (melancholic, choleric, sanguine, and phlegmatic), Eysenck proposed representative orthogonal personality dimensions of introversion-extraversion and neuroticism-stability to give a two dimensional theory of personality.

Measurement of these personality dimensions was obtained through the use of questionnaires which required the individual to respond either "yes", "no" or "?" to each item. The first of these questionnaires measuring the E-N dimensions was the Maudsley Personality Inventory (MPI) (Eysenck, 1956a) which later evolved into the Eysenck Personality Inventory (EPI) (Eysenck and Eysenck, 1964) with the inclusion of a Lie Scale. From this questionnaire a Junior E.P.I. (Eysenck, S.B.G., 1965) was devised to test children from ages 7 to 15. A further addition of a psychoticism dimension was added to the questionnaire to finally provide four distinct measures within the questionnaire: Extraversion (E), Neuroticism (N), Psychoticism (P) and a Lie Scale (L) to measure "faking good". This final questionnaire, known as the Eysenck Personality Questionnaire (E.P.Q.) (Eysenck and Eysenck, 1975) with its junior equivalent (J.E.P.Q.), has withstood numerous validating studies and has evolved over years of factor analysis and hundreds of normative tests.

Much of Eysenck's theory is based around the notion that personality is genetically and physically determined. Briefly stated, it is believed that N is closely related to the autonomic nervous system with specific attention

on the sympathetic and parasympathetic systems. Those individuals high on N possess a more changeable fluctuation in their physiological and emotional responses. E, on the other hand, is directly related to the central nervous system which is affected by the arousal and inhibition of the cortex in the brain. Extraverts are characterized by their low cortical arousal (need for high sensory stimulation) while introverts show a high cortical arousal level which leads to inhibited activity.

A person falling within the Extraversion category of Eysenck's model emerges as being "sociable, likes parties, has many friends, needs to have people to talk to and does not like reading or studying by himself. He craves excitement, takes chances, often sticks his neck out, acts on the spur of the moment, and is generally an impulsive individual. He is fond of practical jokes, always has a ready answer, and generally likes to 'laugh and be merry'. He prefers to keep moving and doing things, tends to be aggressive and lose his temper quickly; altogether his feelings are not kept under tight control, and he is not always a reliable person" (Eysenck and Eysenck, 1975, p. 9).

On the other hand the introverted person is described as being a "quiet retiring sort of person, introspective, fond of books rather than people; he is reserved and distant except to intimate friends. He tends to plan ahead, 'look before he leaps' and distrusts the impulse of the moment. He does not like excitement, takes matters of everyday life with proper seriousness, and likes a well-ordered mode of life. He keeps his feelings under close control, seldom behaves in an aggressive manner, and does not lose his temper easily. He is reliable, somewhat pessimistic, and places great value on ethical standards" (Eysenck and Eysenck, 1975, p. 9).

Over the years two sub-factors of extraversion have emerged: impulsivity and sociability. Although these factors are very much related to each other, there is evidence to believe that it was the impulsivity side that is associated

with criminal behaviour. Schalling (1970) suggested that the relations postulated by Eysenck between conditionability and extraversion are valid only for the "impulsiveness" component. A hypothesis was formulated by Schalling and Holmberg (1970) which stated that "criminals have higher scores than non-criminal subjects in the impulsiveness component of Extraversion, on the basis of its emphasis on acting rapidly without caution, lack of planning, happy-go-lucky and carefreeness" (p.4), but that, due to the effects of institutionalization and disturbances in interpersonal relationships (neurotic introversion) "criminals may be expected to have lower scores in the sociability component of Extraversion".

Through a carefully controlled study of matching institutionalized offenders with non-offenders, Schalling and Holmberg were able to show reliable differences between these two groups supporting the notion that institutionalization minimizes sociability scores.

Attempts have been made to partial out the impulsiveness factor through the use of a questionnaire, but, as yet, these two aspects of extraversion have been found to be very interrelated. Impulsivity and sociability will be reconsidered again when we look at delinquency and personality.

The Neuroticism dimension reflects a person's emotional set. A person scoring high on N is described as being "an anxious, worrying individual, moody and frequently depressed. He is likely to sleep badly, and to suffer from various psychosomatic disorders. He is overly emotional, reacting too strongly to all sorts of stimuli, and finds it difficult to get back on an even keel after each emotionally arousing experience. His strong emotional reactions interfere with his proper adjustment, making him react in irrational, sometimes rigid ways" (Eysenck and Eysenck, 1975, p.9). On the other hand, the individual who shows a low N score (stable) is generally less excitable, is less worried and is on even keel with what goes on around him.

The third dimension in Eysenck's personality theory which is a relative newcomer is Psychoticism. Initially identified by Eysenck in 1952, this dimension was added to the E.P.I. in 1964. A high P scorer can be described as being "solitary, not caring for people; he is often troublesome, not fitting in anywhere. He may be cruel and inhumane, lacking in feeling and empathy, and altogether insensitive. He is hostile to others, even his own kin, and aggressive, even to loved ones. He has a liking for odd and unusual things and a disregard for danger; he likes to make fools of other people, and to upset them". The high P child emerges as being "an odd, troublesome child; glacial and lacking in human feelings for his fellow-beings and for animals; aggressive and hostile, even to near-and-dear ones" (Eysenck and Eysenck, 1975, p.11). All of these dimensions are assumed to represent categories within the 'normal' continuum where only the extremes represent a pathology. In the case of Psychoticism it is found that schizophrenics score very high on the P scale whereas lower scorers are much less pathological in their behaviour.

The final measure in the Eysenck Personality Questionnaire is the "Lie" scale. This scale was designed to measure how much the subject was "faking good" but has also come to identify subjects who are naive. Studies conducted by Eysenck and Eysenck (1970a), Michaelis and Eysenck (1971) and Eysenck, Nias and Eysenck (1971) showed the L scale to be a consistent factorial unit and that apart from dissimulation the scale seemed to measure a degree of social naivete (Eysenck, S.B.G. and Eysenck, H.J., 1968). Under conditions where there was high motivation to dissimulate there was a notable correlation between N and L. This correlation is eliminated, however, when the need to "fake good" is low. Recently Kirton (1977) separated high and low scorers on the L scale and studied their responses on tests of dogmatism, intolerance of ambiguity, inflexibility and conservatism. He found that high L scorers showed high internal consistency within each test with little evidence of faking. High L scorers also scored highly on "Adorno" type tests. Kirton concludes

that the L scale tends to identify persons who are both naive and honest.

It has been found that the L scale score decreases with age in children, and later increases with age in adults. Studies correlating antisocial behaviour with personality in children (Allsopp, 1975; Powell, 1976) have shown the L scale to be a good (inverse) predictor of delinquency. Although much has to be learned yet about the L scale, it can now be regarded as a fourth dimension of personality.

1.2 EYSENCK'S THEORY OF CRIMINALITY

There have been numerous theories of criminality reflecting various disciplines and schools of thought. Historically, criminals had been seen and treated as moral imbeciles. Popular sociological theories have emphasized environmental factors such as poverty or broken homes. Others strongly believe race and intelligence play the most significant role in the causation of crime. These debates have gone on, unfortunately, with little if any systematic research to help support or disprove these theories.

There has been much research and documentation on Eysenck's theory of criminality since his book Crime and Personality was first published in 1964. Of the two influences that affect criminality, Eysenck has consistently emphasized that genetically determined traits play the most significant role in determining antisocial conduct. "We shall be prepared to discover innate biological factors determining in some degree the moral or immoral, criminal or non-criminal reactions of human beings to certain types of situations" (Eysenck, 1964).

To briefly outline Eysenck's theory, he proposes that by nature people are selfish and criminally intended, but that "conscience" is the main source of restraint in holding us back from our primitive impulses. "Conscience" is obtained through a process of social conditioning which, according to Pavlovian theory, is acquired in early childhood and adolescence. Certain persons have what could be called "under-developed" consciences either because they lack

the ability to condition well or they have been conditioned in an improper environment. Extraverted persons generally condition less well than introverted persons, and thus tend to behave in an antisocial way. Anxiety or high neuroticism serves to accentuate the extraversion trait and increases the likelihood of propensity toward crime. Thus individuals high on extraversion and high on neuroticism are expected to be found among criminal and delinquent populations.

There has been much research which has attempted to validate Eysenck's theory of criminality. In studying personality differences between adult prisoners and normals, Bartholomew (1959) administered the M.P.I. to a group of first offenders and a group of recidivists and compared their scores against normative scores from the general population. Significant differences were found on both the E and N dimensions between the two prisoner groups with the recidivists scoring higher on E and N than the first offenders. There were, however, no significant differences between the recidivists and the normal population or between the first offenders and the normal population. Bartholomew discussed the effects that the artificial environment of the prison might have on a personality measure such as the M.P.I. stating that "it is unlikely that a subject could answer any given question about himself without some reference to his immediate predicament".

Fitch (1962) administered the M.P.I. to a prison population and found that recidivists had significantly higher N scores while showing no differences on E. He also found that the scores were not affected by intellectual ability. Also comparing recidivists and first sentence prisoners using the M.P.I., Blackler (1968) found little differences between the two groups on E and N. The N scores were higher than the norm with E scores similar to normative data.

A study undertaken by Eysenck and Eysenck (1970b) to determine personality differences between prisoners and controls as measured by the P.I. (Personality Questionnaire - which was an interim questionnaire between the E.P.I. and the

E.P.Q.) revealed significant differences between the criminal population and three control groups on P. Moderate differences were noted on the N dimension while only slight support for Eysenck's theory was obtained on the E dimension. Eysenck and Eysenck (1971a) followed up that study by administering the specially constructed P.I. to male prisoners and three groups of controls: university students, a male parent group and industrial apprentices. The eighty items were factor analysed arriving at the P, E and N scales. All three scales differentiated the criminals from the control groups. On the E scale the items related to sociability were separated from those related to impulsivity. Eysenck and Eysenck concluded that, "the impulsiveness items clearly do differentiate between criminals and controls in a manner not found in the case of the sociability items" (p.55).

The study advanced the idea that in and of themselves the P, E and N personality types may be too broad thus requiring item analysis to help separate the higher order items from those items which show a minimum of differentiation. Despite the fact that no distinctions were made between the kinds of criminals, all three scales clearly differentiated the criminal group from the control groups.

Using the P.E.N. questionnaire (another interim questionnaire developed from the E.P.I. before the P.I.), Eysenck and Eysenck (1971b) tested criminals and railmen to determine personality differences between the two groups. Being matched for age, social class and sex, the results showed the prisoner group to be significantly higher on P and N with lower scores on E and no differences on L. Unlike the previous inventories, the E factor in the P.E.N. contained almost all sociability items and very few impulsivity items which was the reason given to account for the lower E scores of the prisoners (Eysenck and Eysenck, 1977).

Using the E.P.I., Black and Gregson (1973) tested thirty recidivists, thirty first-offenders, and thirty controls in a prison study looking at time perspective and purpose in life. Although their results were mixed, the study

showed that the recidivists scored significantly higher on N than did the controls or the first offenders and they generally found little purpose in life and had restricted future time perspectives. No differences were found between the three groups on Extraversion.

In a study comparing female prisoners with three separate control groups, H.J. Eysenck and S.B.G. Eysenck (1973) found the female prisoners to have high P, high N and high E scores in agreement with Eysenck's theory of criminal behaviour. In comparison with a study between male prisoners and controls, the female prisoners showed surprisingly higher P scores than the male prisoner group. One explanation given was that "crime is so unusual an activity for women that only the most unusually high P scorers overcome the social barrier involved".

Burgess (1972b) introduced a different perspective in understanding Eysenck's theory of criminality using what is called a zone analysis. He proposed that it was the combination of personality factors (E and N in his case) that heightened the propensity towards crime. By grouping subjects into quadrants (high E/high N, high E/low N, low E/high N, low E/low N) he predicted that those persons who fall within the high E/high N quadrant would be more criminally prone compared with the low E/low N group.

Administering the P.E.N. to prison inmates, hospital orderlies and students, Burgess found that the criminals were over-represented among the neurotic-extravert group. Two additional studies reported by Burgess comparing prisoners with railway men and students also found significant differences between prisoners and controls when they were divided into high and low E and N cells. Borrowing the Hullian model which states that performance is the product of habit, strength and drive, Burgess proposed a new formula equating propensity toward crime with the product of E and N squared. Introducing the variable "h" to represent hedonism, the formula read: $h = (E \times N)^2$.

Incorporating Burgess' idea of grouping the subjects into quadrants of high and low E and N, H.J. Eysenck and S.B.G. Eysenck (1973) discovered significant differences between prisoners and controls in the high E/high N and low E/low N quadrants. Criminals were shown to score higher on E and N in accordance with Burgess' previous finding.

In an additional study using a quadrant analysis in relating the E.P.I. to criminality, Shapland and Rushton (1975) collected personality scores from a working-class population of boys from Oxford. The scores were compared against a self-report delinquency measure (Gibson, 1967a), and the mean number of crimes admitted was calculated for each quadrant. The results showed that the degree of delinquency reported was related to Extraversion, but no relationship with Neuroticism was found. There was also no support for the contention that neurotic extraverts would commit a larger proportion of the crimes.

In an attempt to rule out the "institutionalization" effect in studying prisoners and controls, Burgess (1972a) administered the P.E.N. to short-term recidivist prisoners who had not served more than one year on their sentences. These scores were compared with a psychiatric prison population and scores of employees of London Transport. The results showed that when prisoners and controls were matched for N, there were little or no differences in E. The N scores of the prisoners were, however, significantly higher than controls and in matching prisoners and controls the group numbers were significantly reduced.

Most of the above studies have attempted to find evidence either for or against Eysenck's theory by administering one of the personality questionnaires to adult prisoners. Although many of the studies supported Eysenck's theory and no study reported significant negative results, methodological issues arise in testing criminals in penal institutions compared with controls. One objection

is that prisoners are really criminals who get caught, omitting the criminals in society who have not been caught. Control groups, in some studies, may contain worse criminals than found in the criminal groups, and many studies also make no effort to differentiate the criminal types, lumping petty thieves with murderers, young and old alike. Proper precautions to secure a truly random control group are also rarely taken.

Let us now turn our attention to a more complex antisocial phenomenon: delinquency.

1.3 DELINQUENCY AND PERSONALITY

There has been much written on delinquency theory and causation. In her book Social Science and Social Pathology, Barbara Wootton (1959) reviewed twelve criminological hypotheses to see if there was any evidence to show that certain social determinants lead to the causation of criminal personalities. Reviewing twenty-one studies that consider size of the delinquent's family, presence of other criminals in the family, club membership, church attendance, employment record, social status, poverty, mother's employment outside the home, school truancy, broken home, health and educational attainment, she concluded that there was very little evidence to support a direct causality between environmental factors and criminal behaviour and that "few generalizations can be made with confidence about those whose behaviour is socially unacceptable" (p.301).

Since then numerous reports have been published supporting popular theories of delinquency causation and offering strategies for prevention. Solutions such as providing opportunities for employment (Briar and Piliavin, 1965), building a better self concept (Dinitz, Scarpitti and Reckless, 1962), relieving social deprivation (Farrington and West, 1971), preventing parental desertion or separation (Gibson, 1968b; Grygier et al., 1969) have been suggested. Unfortunately most of the studies have come short of finding any

reliable factor or factors that significantly differentiate delinquents from non-delinquents.

In his book, The Young Offender, West (1967) reviews the sociological theories of delinquency. Although finding few statistics to support the sociological theories of delinquency, West suggests that modern society aids in promoting delinquent behaviour through impersonality and isolation of deviants. Anonymity of industrial ownership makes loyalty to ones job passé. Child rearing is generally permissive and indulgent while the concept of family unity is waning. The youth culture also supports a short-cut-to-success approach in life thus undermining the work ethic in society and eroding the social moral fibre.

In an attempt to measure the effectiveness of various treatments and therapies on delinquents, McCord, McCord and Zola (1959) matched 253 delinquents with 253 controls in what is now commonly called the Cambridge-Somerville study. The delinquents were randomly allocated into small groups that received psychotherapy, behaviour therapy, medical treatment, and educational training. In following-up both groups six years later, no significant differences were found between the treatment and control groups; both groups revealed a similar delinquency rate. No differences were reported between the treatments.

Conger and Miller (1966) undertook a three year study of delinquency in which they matched known delinquents with non-delinquents and analysed the two groups using past teacher ratings. Each matched pair were investigated according to age, socio-economic status, residence area, I.Q., school background and ethnic group membership. Overall the delinquent population tended to show lower I.Q.'s, lower socio-economic status and poorer interpersonal relations when compared with the non-delinquents. The study concluded, however, by advocating a multidimensional approach in understanding delinquent

behaviour stressing the lack of direct causality between sociological, psychological and economic factors and delinquent behaviour.

The Gluecks (1950) attempted to isolate factors which were linked to delinquency by matching 500 delinquents and 500 non-delinquents all seventeen years of age. Exhaustive comparison of physique, intelligence, economic and social environment, family and personal backgrounds, family structure, school behaviour and temperament were made in the search for likely causal differences. The Gluecks found that delinquents were generally more muscular in build, more extraverted, assertive, impulsive and adventurous while being less co-operative, dependent and stable. The delinquents came generally from deprived families where there was poor parental supervision; either being too lax, erratic or strict. Sixty-six per cent of the delinquent boys had criminal fathers and forty-five per cent had criminal mothers. Two subsequent follow-up studies were undertaken when the subjects had reached the ages of twenty-five and thirty-one. During the 17 to 25 age span the delinquent group continued committing a high rate of serious crimes, but after 25 the crime rate for this group significantly decreased. Glueck and Glueck labelled this as the process of delayed maturation.

D.J. West, with the help of Farrington and others, undertook a long-term survey of 411 normal boys which is now known as The Cambridge Study in Delinquent Development (Farrington and West, 1971; West, 1969; West, 1973; West and Farrington, 1973). Followed over a span of 10 years, between the ages of 8 and 18, West attempted to investigate the predeterminant factors of juvenile delinquency to establish whether those boys who became delinquent portrayed any differences from their normal peers at an early age. According to the study, one-fifth of the youths (84) became delinquent. The study showed that delinquents were in fact different from their non-delinquent peers in many ways. The boys in the delinquent group tended to be more unpopular, and more neurotic; they were more likely to come from broken homes; they tended to have nervous rather than healthy mothers; and they showed a higher incidence

of being born illegitimate. To a lesser extent this group came from families with a lower income, and a larger size family, they had comparatively lower intelligence, and their parents showed higher incidences of criminal records.

An ambitious research project directed by William Belson (1975) attempted to re-assess the numerous hypotheses on causal factors of juvenile stealing. Belson's team interviewed 1425 London boys aged between 13 and 16 over a twelve month period and derived many interesting findings about adolescent theft.

The study showed that boys who went out looking for fun and excitement had a higher incidence of theft than did boys who did not. It was also established that boys born in the United Kingdom had a higher incidence of stealing than did boys who were born outside of the U.K. Although the incidence of stealing increased from the sons of professional parents to the sons of unskilled parents, the differences were nominal. Sons of unskilled parents actually showed less stealing than did sons of semi-skilled workers. Of interest was the statistic that 14% of the boys who stated that they had never been caught stealing were in the upper quarter for frequency of theft.

Support was given to the hypothesis that; association with other boys who have been involved in stealing, playing truant from school, having a permissive attitude about stealing, having a desire for thrill and excitement, and believing that they would not get caught, was causally linked to juvenile stealing. Regarding the latter hypothesis, 30% of the London boys felt that they would not be caught by the police if they engaged in stealing. Another 40% felt that they only "might" get caught.

There have been various theoretical models adopted to explain delinquent behaviour in sociological terms. Sutherland (Sutherland and Cressey, 1966) put forward a theory of differential association which states that criminal behaviour is learned, and through frequent and consistent contacts with criminal

persons or patterns of criminal behaviour a process of association takes place. Individual and cultural differences affect this process by either heightening or minimizing the effect of the association. This theory is supported by the fact that delinquent acts are generally committed by groups of youths, delinquency is strongly correlated with crime in the family, high delinquency areas tend to make a youth more delinquent prone, and boys with delinquent friends tend to become delinquent (Rutter and Madge, 1976; Foggitt, 1974).

Matza, in his book Delinquency and Drift (1964) suggests that adolescents commit criminal acts as a way to gain control in an otherwise uncontrolled environment. In this way they are able to register their protest while also having some control of their actions, albeit negative or antisocial. This may be loosely tied with Rotter's (1966) concept of locus of control as suggested by Feldman (1977).

The labelling theory of delinquency has also gained some recent popularity (Schur, 1971; Matza, 1964; Taylor et al., 1973). As reviewed and outlined by Welford (1975) and Feldman (1977) the labelling theory suggests that no actions are criminal; the offender rather than the offence is the major factor in the prosecution; and the offender eventually takes on the identification of being deviant, both internally and externally. Thus once a person is identified as an official delinquent or criminal this identity will continue to shape his behaviour - a sort of self-fulfilling prophecy. Official delinquents will come under closer observation by the police making it more likely that they will be caught committing an illegal act once again. Once convicted the delinquent will return to his delinquent group which is the only place wherein he may enjoy acceptance and status. A label of delinquent will deny him employment opportunities and will perpetuate his anti-authoritarian attitudes (Rutter and Madge, 1976; West and Farrington, 1973).

Gold (1970) found that delinquents who were caught were more likely to continue in their delinquent behaviour than those who were not caught. It is unclear whether delinquent acts would have continued if the delinquents were

not caught, but it is known that conviction and incarceration may act as a perpetuating influence for further antisocial behaviour among youth.

West does not believe that delinquents are necessarily against the prevailing social structure in support of an oppositional system. In his chapter on the delinquent sub-culture he states "...the sociological stereotype of a juvenile delinquent as a person committed to an oppositional culture does not ring true for most delinquents actually met and spoken to. For instance, when questioned in the abstract about offences like car theft or fighting with a weapon very few express approval or admiration for such violations. Their indignation if falsely accused of more offences than they have actually committed suggests that they share to some extent in the common feeling for justice and condemnation of wrongdoing. Likewise, they are insulted rather than flattered to have their mothers called immoral or their fathers described as rogues and criminals" (p.95-96).

Other theories advocating socio-economic factors leading to delinquency have been put forward (Mays, 1963; Mays, 1972; Willmott, 1966). There have also been studies, however, that have rejected many of the socio-economic variables which have been attributed to the causation of delinquency (Conger and Miller, 1966; Stott, 1966). This leads one only to conclude that an all encompassing sociological theory to determine the causative nature of delinquent behaviour is not feasible. With the large amount of overlap between these theories it would be safe to assume that each would have a grain of truth while no one theory could securely account for all criminal behaviour. Radzinowicz supports this notion by stating: "I am strongly convinced that the unilateral approach, the attempt to explain all crime in terms of a single theory, should be abandoned altogether with such expressions as crime causation. The most we can now do is to throw light on factors or circumstances associated with various kinds of crimes" (1966, p.99).

Stephenson (1973) presents a critical review of the literature concerning the various myths attached to juvenile delinquency. After discussing the factors commonly associated with delinquency she concludes: "Obviously juvenile delinquency, a legal definition only, has a variety of causes, often multiple, and can be seen as a final common path. Emotional disturbance, low intelligence, learning disability, family breakdown, parents who are 'criminal models', unemployment, peer group influences, temperamental factors, western society's ambiguous values, the process of adolescence itself, and many other factors, can all be included as possibilities influencing a delinquent outcome. However, emphasis on one of these, to the exclusion of all others, is not helpful" (p.91).

There have been numerous studies in which delinquents and non-delinquents have been compared using the Eysenck Personality Questionnaires. Buikhuisen and Hemmel (1972) administered the Taffel Verbal Learning Test, the E.P.I. and the C.P.I. to delinquents, drunken drivers, economic offenders and controls. The delinquents were found to be more extraverted than controls, however the delinquents (extraverts) showed no differences on conditioning from the controls.

Martin and Clark (1969) using the J.M.P.I. (Furneaux and Gibson, 1961) found no significant differences between truants (absconders) and controls. Price (1968), however, found significant differences between scores on the M.P.I. by borstal girls and normals: the borstal girls were higher on N and E. Eysenck and Eysenck (1974) also found differences between recidivists and non-recidivists of borstal boys. The recidivists showed significantly higher E scores with insignificant differences in the predicted direction for N and P.

In an article intended "to present new evidence which bears on the validity and usefulness of Eysenck's theory applied to persistent young offenders", Hoghughi and Forrest (1970) cited research findings that disputed Eysenck's dimension of extraversion in delinquents (Martin and Clark, 1969). The studies,

which were mostly unpublished, showed delinquents to be high on neuroticism but against prediction were introverted compared with controls. Thus the authors concluded that "from the evidence presented Eysenck's theory of criminality as applied to the juvenile end of the criminal population is at present untenable" (p.252). The article concluded by supporting a "social-learning" approach to delinquency.

Forrest (1974) also failed to find support for Eysenck's theory of criminality for delinquents. Using the Junior P.I. he tested three male groups of non-delinquents (N = 445), non-institutionalized delinquents (N = 134), and institutionalized delinquents (N = 419) all between the ages of 13 and 16. No relationship was found between E, N or L and delinquency. P, however, did significantly differentiate the delinquents from the non-delinquents. Delinquents with many offences did show significantly higher E scores than delinquents with few offences. Delinquents with more than one committal, however, were more introverted compared with delinquents experiencing their first committal. In a recent German study (Hormuth et al., 1977) delinquents were found to have less impulse control and stronger "extraversion" tendencies.

After reviewing the numerous studies which have compared institutionalized delinquents with non-delinquents, the evidence supports the notion that in combination P, E, N and L are strong predictive measures of delinquency. The overriding confounding factors of institutionalization and official labels, however, seem to account for the conflicting findings reported in past studies.

1.3.1 SELF REPORT DELINQUENCY

There has been much argument against the use of official records and using incarcerated delinquents in researching delinquent behaviour (Farrington, 1973; Feldman, 1977; Gold, 1966; Hackler and Lautt, 1969; Hood and Sparks, 1970; Short and Nye, 1957). Investigations have shown that delinquent behaviour

is far more common than official statistics reveal. Many people have admitted to criminal acts for which they would have appeared before a court if they were caught. In discussing hidden delinquency, Murphy et al. (1946) state rather well that "even a moderate increase in the amount of attention paid to juveniles by law enforcement authorities could create the semblance of a 'delinquency wave' without there being the slightest change in adolescent behaviour" (p.696).

Official records also present a false dichotomy between the youth who is caught committing a delinquent act and is hence labelled as a deviant and the youth who commits the same act and is not detected. Thus the term delinquent is appropriate in a legal sense, but is of little value in defining a kind of person.

In responding to the criticisms of using official statistics, alternative measures of delinquency have emerged, the most popular being the self-report questionnaire. The advantages of this method, as outlined by Hood and Sparks (1970), are; that it makes possible an assessment of deviant behaviour of the population as a whole, including the frequency of this behaviour; it eliminates the dichotomy between delinquents and non-delinquents; and it can be used as a measure against official records.

Nye and Short, two of the first initiators of self-report delinquency, developed a scale in 1957 in which they discovered extensive non-institutionalized delinquency (Nye and Short, 1958). In following up the Nye and Short study, Dentler and Monroe (1961) found that up to 46% of junior high school children admitted to having committed a criminal offence. Likewise, Erickson and Empey (1963) found that nine times out of ten a reported offence went undetected and unacted upon, eight out of ten serious crimes went undetected, while official records did reflect more accurately serious crime (65%) compared with minor offences.

Elmhorn (1965) found that 92% of a school children population admitted to at least one offence and that the average pupil admitted to six out of twenty-

one offences. Those children who were known to the police admitted to more serious crimes than the average.

The reliability of self-report delinquency questionnaires has been examined in numerous studies in which re-tests of the questionnaires were administered. Dentler and Monroe (1961) found their questionnaire to be 92% reliable over two weeks, while Belson (1968) reported 88% reliability over one week using 44 items. Over a two year period of test and re-test, West and Farrington (1973) reported only a 6.4 percentage of inconsistent responses of admissions followed by denials. Recently Shapland (1975) reported a 9.9% inconsistency over a period of two years. This reliability is consistent with most questionnaire measures.

In a recent study, Olofsson (1976) administered self-report delinquency questionnaires to 519 sixteen year old boys. Ninety six per cent admitted to committing ten or more offences while 4% admitted committing fifteen or more. Eighty nine per cent stated that they began breaking the law before the age of thirteen. Seven per cent were reported as known to the police; 17% of those known to the police had a lower than average rate of delinquency. Duner and Haglund (1976) in an identical study found that 89% of the subjects questioned admitted to one of the following offences: shoplifting (65%); vandalism (64%); receiving stolen goods (40%); breaking and entering (25%); motorcycle theft (17%); burglary (13%); violence (9%); auto theft (5%). Boys who were actively delinquent regarded their offences as less serious than conforming boys and expressed more intentions of committing delinquent acts in the future.

Williams and Gold (1972) compared self-reported delinquency with official records for adolescents between the ages of 13 and 15. They found a large differentiation: less than 2% had court records while 82% admitted to a chargeable offence. Blackmore (1974) however, contrary to the findings by Williams and Gold, found a close comparison of 75% between self-reported delinquency and official records. Gibson, Morrison and West (1970) found that all of the official delinquents admitted to more delinquent acts than were on record,

while overall their self-report delinquency was higher than those youths who had no official record.

Christie et al. (1965) determined that number of violators differed little from one socio-economic level to another. They also found no relationship between the amount of self-reported crime and the subject's educational level. This finding was supported by Empey and Erickson (1966). In reviewing numerous self-report studies, Gibson (1968a) concluded that delinquency permeates through all social classes differing only in preference of misconduct.

In justifying the interview form of self-reported behaviour, Gold argues that the intelligent and conscientious adolescent who has a good memory will tend to over-report in a questionnaire. The interviewer, in effect, can probe and extract those behaviours which would not be seen as offences. Written tests then, do not just measure the amount of delinquency that has taken place, but they measure the subject's perception of that behaviour in themselves and others. Thus Gold states that: "probing by an interviewer on the spot could winnow out the misunderstandings and identify and draw out omissions" (1966 p.30).

Kulick et al. (1968) looked at the self-report procedure under conditions of anonymity and non-anonymity. They found that youths confessed to more deviant behaviour using anonymous questionnaires but the difference between the two report techniques was small. Youths were found to be less prone to confess to serious crime when the questionnaire was non-anonymous but the authors suggested that the importance of anonymity was overemphasized.

Krohn et al. (1974) administered self-report delinquency questions to three groups of undergraduates: one group obtained a checklist through the mail; the second group was interviewed by a very authoritarian looking "straight" person; and the third group was interviewed by a long haired "hip" radical person. The results showed no significant differences between responses given on the checklist and those given through the interview, although the checklist produced more admissions. Between the two interviewers, however, the "hip"

interviewer elicited significantly more responses and admissions to delinquent behaviour.

Clark and Tifft (1966) further attempted to verify the two self-report questionnaires of Nye and Short and Dentler and Monroe by following up the subjects with an interview and a polygraph examination. The results found both questionnaires to be accurate although some items were seen to be mis-leading.

Studying racial differences when comparing self-report and official delinquency, Gould (1969) found a relationship between the two forms of delinquency only among Caucasians. Significant differences were noted for Negroes and Orientals between self-reported and official delinquency. No relationship was found between race and delinquency when using self-report delinquency measures. Williams and Gold (1972) found that white and black boys committed the same number of offences while black offences were generally more serious. Hackler and Lautt (1969) hypothesized that under-reporting would be more pronounced for blacks compared with whites. Using self-report delinquency questionnaires, police records, teacher ratings, school misconduct and peer ratings, they found only a mild relationship between under-reporting and blacks. Overall the study did not show widespread under-reporting.

Hindelang (1971) administered self-report questionnaires and the M.P.I. to 234 high school boys and compared high, medium and low E and N to delinquent involvement. He found that as E increased the number of delinquent acts reported increased. The Neuroticism scores were not shown to be as consistent as E but the correlations were in the predicted direction. Likewise, Gibson (1967b) gave the J.M.P.I. to 394 school boys and contrasted their scores against teachers' ratings of their behaviour. He found N to be highly correlated with teacher ratings of delinquency while E was only mildly associated with misbehaviour. After further analysis, however, Gibson found that the impulsivity of Extraversion was highly correlated with teacher ratings of

misbehaviour in contrast to the "social extraversion" or sociability dimension. It was also found that the Lie scale was highly correlated with the teacher's ratings which, Gibson suggests, could serve as an inventory of self-reported delinquency. Following up this suggestion, Gibson (1969b) found, in a further study, that delinquents consistently scored lower on the L scale. E also predicted delinquency conviction while N correlated highly with social handicap.

Studies undertaken by John Allsopp have shed much light on the relationship found between self-reported delinquency and Eysenck's dimensions of personality. Allsopp (1975) studied three groups of school children for his Ph.D. Thesis. Using a self-report antisocial behaviour scale (ASB) which was modified from Gibson's (1967a) self-report questionnaire, he tested a group of grammar school boys aged 11 to 16; primary school boys and girls aged 9 to 11 years and secondary school boys aged 13 to 15. With the exception of E in the primary school study, all of Eysenck's dimensions correlated positively with self-reported delinquency and a teachers' rating of naughtiness. P proved to be the highest predictor of antisocial behaviour. The impulsiveness side of Extraversion was factored out to be highly correlated with antisocial behaviour.

In a previously published report, Allsopp and Feldman (1974) found that girls aged 11 to 15 who scored highest on the ASB showed elevated scores on P, E and N. Those who scored high on two of the dimensions had lower ASB scores, while those who scored high on only one of the three dimensions reported even lower ASB scores. The high E, high N, high P group also showed the highest "naughtiness" rating. Allsopp and Feldman (1976), in another study, tested boys aged 11 to 16 years of age. They once again found that all of the P items on the J.E.P.Q. differentiated the high ASB from the low ASB scorers. E and N also differentiated the two groups, although not as well as P. Re-analysing the data, Allsopp and Feldman (1976) found that P and N tended to predict certain kinds of misbehaviour: high L scorers being

well behaved and low L scorers being badly behaved. An introduction of a criminality (C) scale was also put forward consisting of those E.P.Q. items that differentiated most between the two ASB levels.

Graham Powell (1976) presented further support for Eysenck's theory by testing 808 middle-class children between the ages of 7 and 16 years using the ASB, a teacher's rating scale, a social attitudes scale, a stereotyping test plus the J.E.P.Q. He found non-conformity greatest in children who scored high on all three personality traits. P and L were shown to be the best predictors of deviancy while E and N were more associated with deviancy for older children. Powell concluded that Eysenck's theory of criminality also applies to normal children who have normal, low level forms of deviancy. Saklofske (1977a) recently replicated Allsopp's and Powell's findings revealing high correlations between P and self-report antisocial behaviour and teachers' ratings of misconduct. Saklofske (1977b) also found high P scorers to obtain high scores on the Devereux scales measuring disrespect-defiance and class-room disturbance.

Of added interest is Powell's finding that children high on P, E and N show a higher incidence of cigarette smoking behaviour. Numerous other studies have investigated the relationship between smoking and personality and revealed positive correlations between delinquency, Extraversion and smoking (Backhouse and James, 1969; Eysenck, 1963a; Eysenck et al., 1960; Kanekar and Dolke, 1970; Rae, 1975).

1.4 CONFORMITY, STEREOTYPING AND PERSONALITY

Much research has gone into examining conformity in children and adolescents. Studies by Asch (1956), Iscoe et al. (1964), Hamm and Hoving (1969) and Feldman (1972) looking at aspects of normative integration under group judgement conditions found females to be more conforming than males with conformity increasing with age. Crandall et al. (1958) and Mussen and

Kagan (1958) feel that parents play a strong part in instilling conformity orientations in their children. Leadership (Marinho, 1942), goal-orientation (Krebs, 1958) and need for social approval (Strickland and Crowne, 1962; Moeller and Applezweig, 1957) also are identified in significantly influencing the acquisition of conforming behaviour.

Hoving et al. (1969) presented groups of children with slides divided in half showing dots on both halves of the slide. The children were instructed to determine which side had more dots. Using confederates to incorrectly choose the half with the least dots, it was found that conformity decreased with age on tasks in which the alternative chosen by the group clearly differed from the objectively correct answer. Conversely, however, conformity was found to increase with age as the task became more ambiguous. Thus in situations producing little conflict between the objectively correct answer and peer pressure conformity noticeably increased with age.

In examining children's stereotyping behaviour, Stafferi (1967) showed 90 male children silhouettes of endomorph, mesomorph and ectomorph body types and instructed them to match up the figures with 39 adjectives. The mesomorph image was seen as the most favourable of the images. The children were accurate in identifying their own body types although most of them preferred to look like mesomorphs. Cavior and Lonbardi (1973) had children judge full length pictures of male and female eleven and seventeen year olds for physical attractiveness. The five and six year olds showed very low inter-rater reliability while from the seven year olds up to seventeen year old group conformity was notably more consistent. Similarly Kratochwill and Goodman (1973) found that ability to judge age correctly increased linearly with age.

Moral judgements are also significantly affected by age. Examining Piaget's (1932) model of moral development, Bandura and McDonald (1963), Ugurel-Semin (1952) and Furgy and Wiloshin (1969) found that modelling and

peer pressure can significantly alter children's moral behaviour. Grinder (1964) and Green and Schneider (1974) also found, similar to the conformity studies, that moral judgements and altruism increased with age. Keasey (1973) noted that children exposed to one-sided view points evidence more opinion change than those exposed to two-sided presentations.

In attempting to verify the widely held belief that societal moral attitudes have changed over the years, Wright and Cox (1971) replicated their own study initiated in 1964 using sixth-form boys and girls measuring moral and religious belief. They discovered significant shifts in judgement over the seven year period. In almost every case (except smoking) there had been a definite swing towards acceptance of otherwise unequivocally condemned behaviour. These changes in moral belief were also found to be independent of religious commitment.

Fodor (1972) used the Kohlberg Interview technique to assess 40 delinquents and 40 non-delinquents on moral thought. The delinquents were shown to have substantially lower moral judgement scores than the non-delinquents. Surprisingly the delinquents who could be dissuaded by the experimenter away from their moral decisions received lower moral judgement scores than the delinquents who resisted influence. Prentice (1972) found that delinquents can significantly change their moral judgements based on live and symbolic modelling techniques. Briar and Piliavin (1965) argue that because of poor social modelling and situationally induced motives to deviate, delinquents acquire less conforming behaviours.

Few studies have examined the relationship between moral behaviour, conformity and personality in adolescents. Powell (1976, 1977) administered a self-designed stereotyping test in which the subject matches twenty concepts to 6 female and 6 male models all the same except for clothing styles, to 808 children. He also tested the children for personality (J.E.P.Q.) and antisocial behaviour (ASB). Overall, Powell reported that girls stereotype

more strongly than boys; older groups stereotype more strongly than younger groups and male models are stereotyped more strongly than female models. He found that the high P scorers stereotype less well as a group compared with low P scorers. High scorers on the ASB also showed less conformity as a group.

Stewart et al. (1973) gave the J.E.P.Q. and the female stereotyping test to 76 secondary girls. They found that as P scores increased, the trait "self" correlated stronger with "likes parties", "not like a wife", "stays out late", "liked by men", "disobedient", "agrees with sex before marriage", "has lots of boyfriends", "not strict", "likes tough boys", and "likes kissing". Thus the findings of these studies suggest that the high P scorer and persons high on antisocial behaviour conform less well and have odd perceptions of other people. Their self concepts also include independence, deviancy and permissiveness.

Along with the data that show delinquents to be basically non-conforming, studies on self concept have shown that delinquents see themselves in a negative light when compared with non-delinquents (Lively et al., 1962; Masters and Tong, 1968; Noble, 1971). Deitz (1968) compared delinquents and non-delinquents on six items of self concept. "Me as I would like to be" differentiated the two groups significantly showing delinquents to have higher self-expectations than the non-delinquent group. Bhaget and Fraser (1970) tested two groups of delinquents and a control group on a semantic differential to estimate self and ideal perception. The delinquent group responded more negatively to "myself" compared with the controls while "ideal" showed no significant differences. Ueda et al. (1967), however, found no differences between delinquents and a control group on present and ideal self image variables using Japanese subjects. Likewise, Cole et al. (1969) also found no differences between two delinquent and one control group of females on self concept.

Campbell (1976) compared delinquent with non-delinquent girls on 40 concepts of "myself". Predominantly the delinquent girl viewed herself in a more negative image compared with the controls. The delinquents rated themselves lower on usefulness, happiness, honesty, femininity, wisdom, sexiness, beauty, warmth, interested and law-abiding. On the other hand, the delinquent girl perceived herself as more positive than the control on items such as strong, brave, clean and active reflecting a more masculine self image.

An interesting study taken up by Aronson and Mettee (1968) involved giving increased and decreased self esteem feedback to subjects after they had taken a personality test. The subjects then participated in a game of cards in which they were allowed to cheat. The findings showed that significantly more subjects cheated after having received the low self esteem feedback condition. Combs et al. (1963) argue that using self-report measures of self esteem are quite invalid after finding no relationship between children's own rating of self esteem and teachers' ratings of the children's self esteem. They conclude their study by suggesting that self-report measures of self concept measure more how the child would like to be seen and that "objective" measures of self concept are unavailable.

Some discussion has been given to the theory that introverted persons will misperceive social cues more than extraverts due simply to the lack of social exposure. In describing his study on perception of social desirability, Lemaine (1970) states: "extraverts are characterized by a strong desire for contact with other people...it is felt that extraverts, because of their marked sociability, are likely to have acquired a conceptual and practical knowledge of the social norm whereas this knowledge would be lacking in introverts. In particular, perception of the norm by introverts would be more uncertain and would be reflected in greater variability of judgments" (p.225). One hundred and eighty subjects were divided into introverts and extraverts and each subject

was asked to rate fifty six characteristics on social desirability and personal desirability. The results showed no major differences between groups although introverts showed greater ambiguity and were less consistent compared with the extraverts. Lemaine's hypothesis that extraverts would be better perceivers of the norm was not supported.

This section has attempted to review the relevant literature on conformity, stereotyping and personality. It can be deduced from previous studies that females tend to conform more than males, specifically in stereotyping behaviour, and some personality types conform better than others; delinquents being a specifically non-conforming group. Along with poor conformity, delinquents were shown to have a particularly low self esteem.

1.5 RISK AND PERSONALITY

There have been many different definitions of risk derived from the different contexts in which risk may arise. One speaks of risk initially when encountering immediate danger, but the concept of risk can be described in numerous other ways. There is the risk of smoking, the risk of asking someone for a favour, the risk of betting in a lottery, the risk of offending someone and even the risk of not doing something such as not buying insurance. Bem (1971) points out that the concept of risk can be applied in nearly every human action of which the consequences are uncertain. Kogan and Wallach (1967) define risk by stating that "risk taking...is to refer to behaviour in situations where there is a desirable goal and a lack of certainty that it can be attained. The situations may take the form of requiring a choice between more and less desirable goals with the former having a lower probability of attainment than the latter" (p.115).

In describing the reward and punishment aspect of risk taking, Rettig (1966b) states that risky decision making is a function of the perceived risk, the level of which is a function of the components of the risk situation;

expectancy and value of gain, expectancy and value of censure, and severity of behaviour. Bem (1971) outlines a mathematical function of risk as 1) the probability of each outcome; 2) the gain vs. the loss of each possible outcome; 3) the expected value of the gamble (i.e. the average net gain or loss expected); 4) the subjective probability and expected utility (subjective value) of each outcome.

There have been numerous models of risk many of which are very descriptive and complex. Mathematical models of risk have been put forward by Kogan and Wallach (1964) describing a decision-making and cognitive-judgemental process using correlational techniques. Coombs and Huang (1970) also presented a "portfolio" theory of risk preference which suggests that each individual has an ideal risk level and for each level of expected value (reward) the individual will adjust the situation according to his own preferred level of risk. This is experimentally examined and substantiated by Pollatsek and Tversky (1970).

Atkinson (1957) has become well known for his theoretical model describing motivational determinants of risk taking behaviour. He states that persons with strong achievement motivation prefer intermediate risks, while persons in whom the motivation to avoid failure is stronger prefer either very high or very low risk taking situations. He defines six variables in his model: 1) Ps, the subjective probability of success; 2) Pf, the subjective probability of failure; 3) Is, the incentive value of success; 4) If, the negative incentive value of failure; 5) Ms, the achievement motive; 6) Maf, the motive to avoid failure. The variables are combined in the following equation:

$$\text{Resultant Motivation} = (Ms \times Ps \times Is) + (Maf \times Pf \times -If)$$

Atkinson's theory, unlike other risk taking theories, was the first to take individual differences into account in explaining a person's tendency to approach success or avoid failure. The individual whose resultant motivation is positive will prefer 50/50 risks to risks having more extreme probabilities (Weinstein, 1969).

Edwards (1954) devised his own model of risky decision making based on the assumption that people make decisions so as to maximize their subjective expected utility. It has since come to be called the SEU theory. Edwards' formula for his theory is as follows:

$$SEU = Pi \times Ui$$

where Pi refers to the subjective probability corresponding to the objective probability of the ith outcome and Ui is the utility or subjective value. Edwards found that people behave according to subjective rather than objective probabilities of winning. Thus what looks to be an irrational decision from the viewpoint of expected value may be a rational choice from the perspective of subjective utility. Phillips and Votey (1972) argue that in strictly balancing profit and loss, criminal activity may be justified rationally as being more beneficial in the end compared against legitimate employment. This, however, would not take subjective utilities or probabilities into consideration.

Slovic and Lichtenstein (1968) suggested that subjective probability and utility are not multiplicative, as in the SEU theory, but rather are additive in determining risky decision making. They proposed a formula which makes attractiveness of a gamble (A) equal to the sum of the objective probabilities of winning (P1) and losing (P2) plus the values of winning (V1) and losing (V2). Each would be weighed (W) according to the individual, either negatively or positively:

$$A = W1P1 + W2V1 + W3P2 + W4V2.$$

This formula accounts for individual differences in how each person would place his own priority on the outcome of the decision. Some individuals are concerned about the probability of winning, others are more concerned about their chances of losing, others are concerned about what they can win, while still others are more attentive to what they might lose.

The risky shift phenomenon, documented by Kogan and Wallach (1964) revealed that group discussion generates a shift toward greater risky decision

making. The risk-as-value hypothesis, derived from the risky shift theory (Brown, 1965; Madras and Bem, 1968; Pruitt, 1971) states that a choice shift depends upon two assumptions; 1) risk is valued in our culture in most situations, and 2) social comparison processes operate when a group convenes to make a decision or discuss an issue. For situations eliciting a value for risk, individuals who find themselves in a group of people advocating a riskier position than their own shift toward risk causing the average for the group as a whole to shift toward risk. For situations eliciting a value for caution, the same processes apply in the opposite direction and cause an apparent group shift toward caution. Several studies have supported these assumptions (Levinger and Schneider, 1969; Wallach and Wing, 1968).

Many psychological studies have been designed in an attempt to measure how individuals differ in risk situations. Cohen and Hansel (1956) monitored pedestrians as they crossed a road against heavy traffic. Being concealed in a parked car they measured the time between when the person looked up to begin crossing the road and when the first on-coming vehicle reached the place where the person had crossed. In this way they established a level of risk based on the number of seconds it took between beginning to cross the road to when the first car came. They found that males took greater risks than females, and individuals over thirty gave themselves a greater margin of crossing time than those who were under thirty.

Cohen and Hansel (1956) also asked subjects to estimate their chances of successfully hitting a ball-bearing between two markers using a mallet. This estimate was compared against their actual performance under six trials each with different levels of difficulty. Overall they found that the majority of subjects underestimated their chances for success. In a riskier situation where subjects were to predict their chances of successfully jumping over a wooden beam raised and lowered to different heights, the subjects became more conservative in their judgements and, in the majority of cases, consistently underestimated their chances for success.

In another study when football players were asked to estimate their chances of kicking a goal at various distances, they tended to overestimate their ability to make the long shots and underestimate their ability to kick a goal close up. McGlothlin (1965) confirmed this phenomenon by finding that when people place bets they tend to overbet on the long-shots and underbet on the favourites.

Wallach and Kogan (1961) tested populations of young and old men and women using the Choice Dilemmas Procedure and a measure for skill perception which consisted of pushing a toy car between two posts. They found older women more sure of their decisions and ability than older men. Young boys were the most risky but also the most confident of their ability. Wallach and Kogan (1959) tested 357 college students for judgement processes and certainty of decisions. Women were found to be more conservative than men on their certainty of decisions. Men were bolder on matters of finance, death and football while women showed greater confidence concerning marriage and art. In simulated games of risk taking McManus and Bell (1968) found males to be more risk taking than females.

Administering the Choice Dilemmas Procedure to 170 students, Willens (1969) found that persons tend to view themselves as moderately risky vis-a-vis their peers. They would, in turn, tend to ascribe positions to their peers that were equal to or more cautious than their own. Similar results were found by Wallach and Wing (1968). Shoham et al. (1976) administered questionnaires to army drivers to assess internalization of norms, anxiety level, self-report offences and risk perception. They found that anxious drivers tend to be greater risk takers and as a consequence cause more accidents.

Strickland et al. (1966) looked at risk taking behaviour with regard to internal and external control and wagering before or after a chance event. They found that subjects defined as internally controlled took greater risks than those defined as externally controlled. There was also less risk taking

noted after the event than before the event. Likewise, Liverant and Scodel (1960) tested 26 internally and 26 externally controlled subjects, as defined by the Rutter Social Learning Scale, for risk taking in betting situations. As predicted, the internally controlled subjects chose more intermediate and fewer low probability bets than the externally controlled group. The amount of money wagered on safe as against risky bets were found to be significantly greater for internally controlled subjects.

Numerous studies have employed gambling techniques to determine risk levels. Cameron and Myers (1966) administered the Edwards Personal Preference Schedule to 69 males who gambled in imagination and for real money on a roulette wheel. Subjects high on exhibition, aggression or dominance tended to prefer bets with high payoffs and low probability of winning. Subjects high on autonomy or endurance tended to prefer bets with low payoff and high probability of winning. There were no significant differences found between imaginary and real betting. Waters and Kick (1968) found that persons choosing lower probabilities of winning higher payoffs scored higher on Zuckerman's Sensation Seeking Scale.

Maehr and Videbeck (1968) divided undergraduate students into high-risk and low-risk taking groups. In gambling tasks the high-risk subjects were found to be more persistent than low-risk subjects especially at the 65% level of winning. Overall risk persistence was found to be highest at intermediate reinforcement levels rather than at the high winning or low winning percentage levels.

Lupfer and Jones (1971) had 32 subjects play Jeopardy and a card game for money. They found that those who were most skilled tended to have a higher mean level of risk and a less variable pattern of risk in skilled games compared with decisions made under a chance orientation. Slovic and Lichtenstein (1968) also found that risk taking decisions are based on a person's belief about the relevant importance of probabilities and payoffs. Studying risk taking in 8 and 9 year olds, McGinnis (1973) found that every child attempted to maximize gain

with little or no concern about potential loss. Although Slovic (1966) found no sex differences in risk taking among six and ten year olds, Kass (1964) noted in his study with children of the same ages that boys manifested greater risk taking than girls.

Although gambling methods offer a means of measuring risk taking, the situation can be very artificial. It would be hard to extrapolate these findings relative to real life situations. In some studies subjects deliberately took risks in order to purposely lose money (Steiner et al., 1970) which would most likely not have happened in a real life situation. Thus, because of the difficulty of designing a reliable risk taking experiment, one should not be quick to apply these findings without considering the context in which the results were found.

Various studies have been published which have attempted to look at risk taking behaviour of psychopaths and offenders. Numerous studies have supported the belief that psychopaths show less anxiety in a risk situation and under failure conditions accompanied by punishment than controls (Chesno and Kilman, 1974; Hare, 1970; Lykken, 1957; Rosen and Schalling, 1971; Schmauk, 1970). Cohen (1970), in an essay on uncertainty and risk taking with criminals, offers a formula for assessing risk. The offender is staking his freedom of movement (FM) against his probability of punishment (P) in attaining the loot (L). Both have to be assessed according to their own subjective probabilities of happening (H) and their positive utilities (U). Thus:

$$H(FM) \times U(FM) \text{ vs } H(L) \times U(L) \times \frac{1}{H(P) \times U(P)}$$

In explaining the formula, Cohen states: 'The treatment of uncertainty and risk... may be crucial in distinguishing the offender from the non-offender. One could hazard the hypothesis that... the difference between the offender and the law abiding citizen is, in general, not that the latter is more honest, but that the former is more daring, in the sense that, as compared with his innocent neighbor, he either attaches a lower subjective probability to the possibility of

capture and punishment or he attaches the same probability but a different maximum risk level, by which I mean that the level of subjective probability of capture at which he is prepared to violate the law is higher than the level his neighbor is prepared to accept" (p.295). Cohen continued to suggest that the offender in many ways may misperceive the risk value and as a result is more willing to attempt the offence.

In studying shoplifting behaviour, Kraut (1976) used the Gough's Adjective Check-list and other questionnaires to assess from 606 college students their self concept, level of risk perception and history of shoplifting. Respondents who had shoplifted the most perceived the least risk associated with shoplifting and approved other shoplifting. Shoplifters who had been caught believed that they would be caught again if they continued to shoplift. Although the findings are interesting, the design of the study comes under question. Initially 1500 questionnaires were sent by mail to the college students which suggests that the population that did respond did not reflect a controlled sample. Little mention was also made of how the "shoplifter" group was determined or how many respondents were in that group.

A very thorough study was undertaken by Claster (1967) comparing risk perception between delinquents and non-delinquents. He asked both groups to estimate the actual percentage of persons arrested for certain crimes and actual "cleared by arrest" rates for particular crimes within the U.S.A., according to the official records for one year. Subjects were also asked if they would commit each act and what their chances of arrest and conviction would be. No differences between the delinquent and non-delinquent groups were found in estimating the national percentages. The delinquent group, however, saw themselves as more prone to crime while also seeing themselves as more immune from arrest.

Rettig designed a questionnaire, later to become the Behaviour Prediction Scale, consisting of 64 items each portraying a person in conflict about taking money (Rettig and Rawson, 1963). Each item changed the circumstances of the money-taking situation by amount of censure, amount of gain, reinforcement and expectancy, severity of offence and reference group. After administering this test to populations of undergraduate students, significant differences were found on riskiness only for the reinforcement value of censure. Rettig replicated this study using the same questionnaire with Hindu graduate students. Also similar to the American students, risk perception was found to be most related to expected censure (Rettig and Singh, 1963).

Using a revised version of his questionnaire (32-items), Rettig (1964) tested 36 prisoners and compared their results with 31 controls on magnitude of gain, expectancy of gain, severity of censure, expectancy of censure, and severity of offence. All 32 items pictured a bank employee considering stealing money from his bank. Each subject rated whether he would or would not steal the money on a seven point scale from definitely would to definitely would not. The results showed that the prisoners varied their predictions based more on the severity of the censure (penalty). The stealing behaviour was unaffected by the chances of getting caught which suggests that the prisoners would still take the money if the penalty was not severe even though they are in prison for similar offences.

In an additional study dividing 49 subjects into cheaters and non-cheaters, Rettig and Pasamanick (1964) found non-cheaters to be less aware of high and low risk conditions contrasted with the cheater group who were significantly more aware of risk. Of the four variables, conditions of censure were found to be the best predictors of actual unethical behaviour. Rettig (1966b) also found group discussion to increase riskiness in accord with the risky shift theory. Again censure was found to be the important determinant of behaviour.

When varying the paragraphs to make them more impersonal ("he" as opposed to "I") a significant increase in riskiness was noted. There were no differences in response between sexes.

Krauss, Coddington and Smeltzer (1971) followed up Rettig's work and administered the Behaviour Prediction Scale to first contact and repeated contact groups of adolescents identified by the police. They found significant differences only on the expectancy of gain variable and likelihood of action. Testing alcoholics and non-alcoholics using the same scale, Krauss, Mozdzierz and Macchitelli (1971) found the alcoholic group to be more sensitive to the reinforcement value of censure (penalties). The alcoholics also showed greater total risk scores. This latter finding was replicated by Cutter et al. (1973).

A final study by Krauss et al. (1972) involved testing two groups of prisoners divided into psychopathic and non-psychopathic determined by the M.M.P.I. using 16 items of the Behaviour Prediction Scale. Gain and levels of expectancy of gain were shown to be the variables that affect risk taking the most in both groups.

Caroline Stewart (1976) investigated risk taking and the perception of risk in offenders. Following the format of Rettig's Behaviour Prediction Scale, she designed a questionnaire which included eighteen hypothetical situations with three factors of risk in each: probability of capture, severity of punishment and time. Sixteen offenders and sixteen controls were administered the E.P.Q. and Zuckerman's Sensation Seeking Scale. Between the two groups no differences in perception of risk were noted. The offenders were found to be significantly more likely to act than controls. The groups also significantly differed on Neuroticism (offenders were higher on N) and criminality. Of particular relevance to the present study was her finding that high Psychoticism scorers perceived significantly less risk than low P scorers in both the offender and control groups.

One criticism which might be raised about Rettig's Behaviour Prediction Scale is the artificiality between his high and low levels of censure, gain and severity of offence. Aside from the tediousness of reading 32 paragraphs which differ only slightly between each other, the reinforcement value of censure, as taken from Stewart's questionnaire, changes between; "you could be sent to prison for it" (high) and "you would only get a caution" (low). This would certainly be open to varying interpretations in the extent to which the person "could" be sent to prison or how serious a caution would seem. Since the paragraphs are short and not very descriptive, the interpretation of the risk is also left totally up to the subject with little information on which to base his decision.

A personality trait that influences risk taking behaviour in many ways is impulsiveness. There have been many studies linking impulsivity with delinquency which have been adequately reviewed by Ainslie (1975), Tarpy and Sawabini (1974) and Kipnis (1971). In her M.A. Thesis, Patricia Gillan (1965) tested 80 delinquents matched against 80 controls using the E.P.I., performance tests, psychomotor tests, risk taking and judgement making variables. She found impulsiveness not to be uni-dimensional but rather composed of several factors. Although the delinquents were shown to be generally more impulsive there were no tests which showed a clear distinction between the two groups. Rule and Fischer (1970) in their study found impulsiveness to be a reliable personality trait. Testing subjects using an impulsivity scale, an EKG and a gambling wheel, they found that the probability of winning, cardiac response and variability of the bet were significantly related to the amount of money bet.

Kogan and Wallach (1960), attempting to establish evidence to suggest that impulsiveness influences risk behaviour, found little evidence to support the hypothesis of a direct association between impulsiveness and risk taking. In females impulsiveness was noted as having "a significant impact on decision making when test anxiety or defensiveness is present" (p.186). This was found

to be the opposite case for males. Risk taking was related to impulsiveness only in males low in test anxiety and defensiveness. Thus the authors suggest that personality factors which affect risk taking behaviour are strongly sex linked. Independence and risk taking were found to be positively related in both sexes.

Using a story completion test, Davids and Falkof (1974) compared two groups of institutionalized delinquents on indices of future orientation, accuracy of time estimation and impulsiveness over a fifteen year period. The initial study took place in 1959 with a replication using the same tests on a similar population in 1974. They found that the 1974 delinquents were more impulsive, more present oriented and were more in need of immediate gratification than the 1959 delinquents. Although the differences between the two groups were significant, the study is discussed in the light of the greater willingness today for young people to talk openly about sex, drugs and social taboos.

This section has attempted to review the literature on risk taking and personality. Evidence has been given which shows that certain persons have a higher propensity to take risks. There also seems to be a strong relationship between delinquency and risk taking. Finally, conflicting theories have been presented which suggest that offenders either misperceive risk, underestimating the amount of hazard inherent in any situation, or they are more aware of risk and, in fact, overestimate the riskiness. It is to this idea that the present study attempts to correlate personality, antisocial behaviour and social and risk perception.

CHAPTER 2 THE PRESENT STUDY

2.1 SUBJECTS

The subjects were 1282 secondary school boys and girls between the ages of 13 and 16. The experiment was restricted to only 4th and 5th form pupils. Three different schools participated representing three distinctly different areas. Each school chosen consisted of predominantly white children.

The first school (School 1) is located in Beckenham, Kent containing two separate schools (boys and girls) on the same campus. Three quarters of the pupils are described as coming from middle-class backgrounds with the remaining one quarter representing working-class families. The area is suburban with most families owning property and their own homes. The wage earners of the families are professional and generally salaried. Unemployment is extremely low.

The second school (School 2) is located in Horsham, Sussex. The majority of the families are middle-class with the minority representing working-class backgrounds. The area is rural with families employed either within the town (teachers, shopkeepers) or employed on the outskirts of town (farmers). Most homes are owned and well furnished. The population is predominantly white with a less than 2% racial influence. Due to the lack of co-operation from the nearby girl's school, the subjects from this school were all male.

The third school (School 3) is a mixed comprehensive secondary school located in Rainham, Kent. The area consists of mostly working-class families with numerous council houses dotted around the community. The majority of the working parents are employed in the nearby Ford Motor Company doing manual jobs. The Local Education Authority described the community as consisting mostly of houses, with limited open space and no proper shopping centres.

School 1, then, could loosely be described as being suburban, middle-class; School 2 could be seen as being rural, middle-class; and School 3 could be classified as being urban, working-class. The 4th and 5th form pupils tested represented all levels of achievement. In total 501 girls and 781 boys were tested. 590 of the subjects came from School 1; 292 (all male) came from School 2; and 400 were tested from School 3.

2.2 METHODOLOGY

After the three areas were selected the headmasters from each school were sent a letter briefly describing the study. This was followed by a 'phone call a week later. Appointments were then arranged to discuss the study further and to work out a viable schedule for testing. Only one school declined to participate after the interview.

In order to obtain consistency in age of the subjects, and time of testing, all subjects were tested between March and May of 1977. Testing was administered in group form. There was no streaming in any of the schools. In School 3, there were two classes which were identified as educationally handicapped. For these classes only, the Experimenter read the questionnaires aloud to avoid contamination of results by reading difficulties, otherwise the testing procedure was identical for each group.

All testing was administered by the Experimenter alone, thus avoiding any inconsistency in the testing instructions or procedure. No teachers or staff were present during any of the testing sessions. The testing lasted for one class period so that students absent during that day were unavoidably omitted. The class periods in School 1 and School 2 lasted 40 minutes which allowed just enough time for the subjects to complete all of the tests. In School 3, however, the class periods lasted only 35 minutes aggravated, additionally, by the tardiness of the pupils. During these situations the Experimenter frequently urged the class to work as rapidly as possible. In some of the

testing periods in which there was not enough time the stereotyping test was omitted.

Slides were used for two of the tests as part of the testing procedure. Before the start of each testing period the room was arranged so that each person could see the slides clearly. The subjects were also instructed to move to the front of the room if, at any time, they had difficulty in seeing the slides.

The tests were administered in the following order:

1. Junior Eysenck Personality Questionnaire
2. Risk Perception Test (slides)
3. Stereotyping Test (slide)
4. Antisocial Behaviour Questionnaire
5. Behaviour Prediction Questions
6. Cognitive Perception Question

The following instructions were verbally given to each group at the start of the testing period:

'My name is Bob Jamison and I am from the Institute of Psychiatry in London. I am presently doing research on children's perception and behaviour, and your headmaster (headmistress) was kind enough to allow me to give you some questionnaires and have you look at some slides. These questionnaires are for my research alone and none of the information that you give me today will be shown to any of the teachers or the school officials. I do <u>not</u> need to know your name but I would like you to give me your age and sex and answer all of the questions as honestly as possible. Since our time is limited I ask that you work as quickly as possible. Are there any questions?"

No child refused to participate. Initially 1302 subjects were tested of which twenty either handed back incompleted questionnaires or did not take the study seriously. This, however, accounted for only 1.5% of the sample population. The confidentiality of the study was stated again at the end of each testing period.

2.3 THE MEASURES

Copies of the tests and questionnaires are presented in the appendix (p. 148).

1) Junior Eysenck Personality Questionnaire (Eysenck and Eysenck, 1975) 81-items. The four dimensional factors of Psychoticism (P, 17-items), Extraversion (E, 24-items), Neuroticism (N, 20-items) and a Lie Scale, (L. 20-items) were obtained from this questionnaire for each subject. School 2 and School 3 were administered the 97-item J.E.P.Q. and the sixteen additional items were extracted during the analysis. The instructions which were printed on the top of the questionnaire were read aloud to the subjects.

2) Antisocial Behaviour Questionnaire (Allsopp and Feldman, 1976) 55-items. This questionnaire was derived from Gibson's (1967a) self-report behaviour questionnaire. Modified versions of this questionnaire have been used by Powell (1976) and West and Farrington (1973). Because of the older age group tested in the present study, thirteen items were added and six items were omitted. The instructions were printed at the top of the questionnaire and read aloud to the subjects.

3) Person Perception Stereotyping Test (Powell, 1976) A slide depicting twelve models (six male and six female) each wearing different clothing styles (labelled A to F) was shown. Each subject checked one male and one female figure which best represented each of 17 concepts. The test was modified from the original test in which the subject rank ordered all six models for each concept. The instructions were read aloud to the subjects and an example of "happy" was given as an illustration before the testing began.

4) Risk Perception Test (Jamison, 1977) 6 slides - 4 questions each. Each subject was shown slides of cartoons depicting someone breaking the law. The slides portrayed a figure stealing fruit from a fruit stand, snatching a woman's handbag in public, shoplifting, stealing a car, breaking into a home to steal valuables, and robbing a post office. Each subject was asked to look at the cartoons and answer the four questions for each slide: "Will the person breaking the law get caught?", "Is the person breaking the law just for the fun of it?", "Did the person breaking the law think about doing it long beforehand?", and "Would you ever break the law in this way?". The subject was instructed to check either "definitely", "possibly", "50/50 chance", "possibly not" or "definitely not" for each question. The first slide was described for the subjects and an example of the order of the action in each slide was given:

1	2
3	4

5) Behaviour Prediction Questions (Stewart, 1976) 2 paragraphs - 2 questions each. These questions, taken from Stewart's research, showed the highest differentiation between the offender and control groups in her study. The subject read two paragraphs describing someone shoplifting and stealing a wallet similar in structure to Rettig's Behaviour Prediction Scale (Rettig and Rawson, 1963). Each subject answered two questions for each paragraph: "In this situation do you think that you would get caught?" and "Would you ever break the law in this way?". The subject checked either "definitely", "possibly", "50/50 chance", "possibly not" or "definitely not" for each question.

6) Cognitive Perception Question. At the end of each testing period the following instructions were given verbally to the groups: "According to the second slide, how many people do you think saw the person snatch the woman's handbag as she was getting on the bus?" The question was repeated and the subjects were instructed to place the number on the bottom left hand corner of the last page.

2.4 HYPOTHESES

Based on a review of the literature, the following predictions might be made concerning the results of this study;

1. Personality will predict a tendency toward deviancy and antisocial behaviour in adolescents. Professor Eysenck's theory of criminality states that deviancy is positively related to high Extraversion, high Neuroticism and high Psychoticism. Although past studies have obtained mixed results in the extent to which E and N differentiate delinquents from non-delinquents, individuals scoring high on all three dimensions of P, E and N have been shown to be prone to greater incidence of delinquency and antisocial behaviour.

2. Personality will predict differences in stereotyping behaviour. Powell (1976, 1977) found that high P scorers were less consistent as a group in stereotyping compared with low P scorers. These findings are expected to be replicated. It should also be shown that persons who misperceive on risk perception also are non-conforming in stereotyping behaviour.

3. Personality and antisocial behaviour will affect risk perception in adolescents. Rettig's ethical risk hypothesis states that "unethical behaviour varies predominantly with perceived risk...violative behaviour related significantly to ethical risk sensitivity...high violators will be more sensitive to risk than low violators" (Rettig and Sinha, 1966, p.276). Subsequent studies, however, (Bailey and Lott, 1976; Chiricos and Waldo, 1970; Claster, 1967 and Teevan, 1976) have failed to prove Rettig's hypothesis and, in fact, found risk taking to be negatively related to perceived certainty of punishment. As noted by Feldman (1977), little account has been taken of personality differences in these studies.

It might be predicted that adolescents scoring high on P would be more prone to misperceive risk based on the description that they "try to make up for lack of feeling by indulging in sensation-seeking 'arousal jags' without

thinking of the dangers involved" (Eysenck and Eysenck, 1975, p.11). Gray (1971) suggested in his book on The Psychology of Fear and Stress that "the extravert is relatively insensitive to punishment and the threat of punishment" (p.230). From Eysenck's theory of personality, which states that extraverts have difficulty in forming conditioned fear responses, it could be generalized that persons scoring high on E would show negligible sensitivity to punishment and the threat of getting caught.

Persons scoring high on the Neuroticism dimension are characterized as having a general sensitivity to all reinforcing actions whether they are rewarding or punishing. Thus, although N has not been strong in predicting delinquency, it might be hypothesized that as the Neuroticism scores increased there would be a direct increase in the perception of risk in any given situation. So, concerning risk perception and personality, it could be hypothesized that the high P scorer would see less risk than the high E scorer, who would, in turn, perceive less risk than the high N scorer. Based on the negative relationship L shares with P, it would also be predicted that high L scorers will perceive greater risk than low L scorers.

4. There will be predictable differences between sex and school with regard to deviancy and risk perception. From the review of the literature, it could be predicted that males would score higher on the ASB than females while they would have lower risk perception scores. Only minor differences would be expected between schools on perceived risk and antisocial behaviour.

RESULTS

CHAPTER 3

3.1 RESULTS: ANALYSIS OF J.E.P.Q.

The age and sex breakdown for all subjects are shown below.

TABLE 3.1

AGES	13	14	15	16	Total
BOYS	103	357	287	34	781
GIRLS	59	202	177	63	501
ALL	162	559	464	97	1282

The girls' mean age is slightly higher than the boys' (14.58 compared with 14.32) although all subjects tested were between 13 and 16 years of age.

A breakdown of the means and standard deviations by sex and school for each personality variable (P, E, N, & L) is presented in the appendix (Tables 1 and 2).

The overall means and standard deviations for males and females on the J.E.P.Q. are as follows:

TABLE 3.2

	BOYS		GIRLS	
Variable	Mean	S.D.	Mean	S.D.
P	4.35	2.97	2.58	2.25
E	18.79	3.78	18.39	3.84
N	10.29	4.40	13.19	4.40
L	4.52	3.24	4.71	3.22

All scores fall within the standardized score range presented by Eysenck and Eysenck (1975) for 14 and 15 year olds, although the boys reveal slightly lower P scores compared with the norm. The girls show slightly lower E and L scores and higher N scores than the standardized scores. Table 1 in the appendix shows the comparison between the means and standard deviations obtained

from the present study and the norms published by Eysenck and Eysenck (1975).

As has been shown in previous studies, the dimensions of P, E, N and L have not been strictly orthogonal.

TABLE 3.3

Intercorrelations between Scales for All Subjects

	E	N	L
P	.20	-.01	-.34
E		-.16	-.17
N			-.06

TABLE 3.4

Intercorrelations between Scales for Boys and Girls

	P	E	N	L	
P	--	.17	.10	-.34	BOYS
E	.26	--	-.14	-.14	
N	.07	-.19	--	-.08	
L	-.37	-.21	-.07	--	

GIRLS

The Pearson Product Moment correlations reveal significant positive relationships between E and P, while significant negative correlations are noted between E and N, E and L, and P and L. Similar correlations have been noted in children's studies using the J.E.P.Q. (Allsopp, 1975; Eysenck and Eysenck, 1975; Powell, 1977). The significant correlations between P and L, and E and N have also been documented in standardized studies using adults (Eysenck and Eysenck, 1975). Although significant, the correlations are still quite low. The relationship between P and E has been found to be particularly notable in children. This may be explainable, in part, by the extreme Extraversion scores that most adolescents show. The negligible relationship between L and N supports the notion that there is very little tendency, on the part of subjects, to fake the

answers (Michaelis and Eysenck, 1971).

Intercorrelations between Scales on the J.E.P.Q. are broken down further by sex and school in the appendix (Tables 3, 4 and 5). Significant differences are found between the girls and the boys in relating P with E, and E with L.

A factor analysis of the J.E.P.Q. (81-item) for the boys and girls is presented in the appendix (Tables 12 and 13. Four clear factors of P, N, E and L emerged. The correlations among the primary factors extracted from the 81 items were as follows:

TABLE 3.5

	E	N	L
P	.08	.02	-.30
E		-.05	-.17
N			.04

Apart from the expected negative correlation between P and L and the surprise negative correlation between E and L, there is strong support for the orthogonality of the four dimensions.

3.2 RESULTS: ANALYSIS OF ASB

The following table gives the means and standard deviations for the 55-item Antisocial Behaviour Questionnaire by sex and school.

TABLE 3.6

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	21.76	10.26	17.92	8.89
School 2	22.58	12.74	---	---
School 3	26.19	12.32	16.31	10.05
Total	23.40	11.99	17.39	9.31

As can be seen, the average number of 'yes' responses increases from School 1 to School 2 to School 3 for the boys. The girls in the first school, however, show a higher antisocial behaviour rate than the girls in the third area. For Schools 1 and 3 the boys show higher ASB scores than the girls, as predicted.

The histogram in Exhibit 3.1 shows the frequency of responses for both boys and girls for each item (see appendix Table 14 for corresponding item numbers). In only seven of the 55 items girls reported 'yes' more frequently than the boys. These items, (5) staying away from school without permission, (6) going to an 'X' rated film under 16 years of age, (16) going into a pub, or buying alcohol from a shop, (25) being late for school, (26) refusing to do schoolwork or homework, (27) not wearing proper clothing for P.E. and Games at school, (28) cheating by copying from someone else in a test, and (36) taking drugs, are conspicuously unrelated to stealing or any kind of aggressive mis-behaviour. Most of the items include passive-aggressive behaviour such as being late or being unprepared, or entail age restrictions such as going into a pub under age or seeing an 'X' film. Of the 55 items, taking drugs was the least frequently admitted by the boys. The few girls that admitted taking drugs may well have included prescriptions or mild tranquillizers which may not have necessarily been illegal.

Table 14 in the appendix presents a breakdown of item response percentages by school for the boys. Differences are noted between areas with the School 3 boys showing a generally higher response rate compared with the School 1 and School 2 boys. Area differences are further analysed and discussed in detail in Chapter 8.

Table 3.7 shows a comparison between item responses in the present study and responses on identical items in studies by Allsopp (1975). West and Farrington (1973) and Gibson (1968a) on the ASB. In the West and Farrington and Gibson studies the card sort technique was used described by Gibson (1967a). The

Exhibit 3.1 Frequency Response on ASB for boys and girls

TABLE 3.7

Comparison between studies for males (per cent of 'yes' responses)

Order of Items on Questionnaire	ITEMS	Present Study	Allsopp's Study (1975)	West & Farrington (1973)*	Gibson's Study (1968a)**
21	Using swear words	93.0	95.7	----	----
2	Riding a bicycle without lights after dark	84.6	79.3	77.0	76.5
18	Trespassing	81.4	74.0	63.5	60.7
37	Dropping rubbish on the ground	81.0	78.3	----	----
41	Playing practical jokes	80.4	70.3	----	----
48	Knocking on doors and running away	69.8	31.0	----	----
39	Stealing fruit from a garden or orchard	67.2	49.3	----	----
25	Being late for school	65.0	62.7	----	----
28	Cheating by copying in a test	63.0	71.0	----	----
3	Travelling on a bus or train without paying full fare	59.9	56.7	71.6	69.4
16	Going into a pub or buying alcohol from a shop	58.6	55.7	51.4	43.9
27	Not wearing proper clothing for P.E.	58.4	44.3	----	----
42	Deliberately staying out late	55.8	40.7	----	----
13	Stealing school property	52.9	41.0	29.1	25.0
1	Letting off fireworks in the street	52.8	41.3	84.2	82.1
23	Being cheeky to strangers	48.8	45.0	23.0	15.8
31	Throwing stones at people	47.4	17.3	----	----
9	Stealing things from shops or out of cars	47.0	27.3	----	----
10	Breaking windows in empty houses	46.5	17.7	68.9	65.3
47	Damaging school property	46.2	37.7	----	----
20	Buying or swopping stolen articles	45.5	29.0	36.3	35.7
49	Smoking cigarettes	44.2	43.3	31.9	27.5
40	Damaging other people's property	40.5	40.3	----	----
19	Turning over bins or breaking bottles in the street	38.9	25.0	24.2	16.8
44	Damaging flowers in a park or garden	37.3	10.0	----	----
35	Buying cigarettes to smoke yourself	37.0	35.0	----	----
24	Getting into fights	35.7	40.7	----	----
6	Going to an 'X' film under age	35.1	26.0	64.0	54.1
34	Riding illegally on the back of a motorbike	34.8	21.0	----	----
46	Getting someone in trouble or ganging up on them	34.1	28.7	----	----
43	Stealing anything from another boy or girl	33.8	19.0	----	----
30	Stealing money	31.0	13.7	----	----
14	Causing damage in public places	30.0	17.0	11.9	7.1
4	Smoking during school hours	29.0	25.0	----	----
38	Stealing things from home	29.2	13.7	----	----
12	Driving a car, motorbike or scooter illegally	28.4	23.0	20.3	19.4
15	Carrying a weapon in case needed in a fight	27.0	13.7	20.7	18.4
5	Staying away from school without permission	26.4	19.0	54.3	50.0
11	Belonging to a group that goes around making a row	25.5	8.0	16.8	13.8
33	Making a serious phone call as a joke	22.0	7.3	----	----
54	Stealing goods or money from machines	20.2	----	14.6	9.0
55	Using a weapon in a fight	21.1	----	12.1	10.7
22	Breaking into private property to steal something	12.3	5.3	----	----
53	Taking and keeping a pedal cycle	7.4	----	8.4	7.7
51	Taking a car or motorbike for joyriding	6.0	----	7.4	7.1
52	Planning ahead, breaking in and stealing valuables	3.8	----	4.7	2.6
36	Taking illegal drugs	2.7	----	.5	.0
		(N=781)	(N=218)	(N=405)	(N=94)
	AGES	13-16	13-16	14-15	15

* also Farrington 1973
** also Gibson, 1967a

percentages reported from Allsopp's study were obtained by averaging the percentages of the 3rd, 4th and 5th form boys omitting the responses of the younger boys. Of particular note is the relative increased frequency of reporting compared with past studies. Differences in region, age and circumstances may account for some discrepancies. It seems overall, however, that there is an increase in the reporting of delinquent activity by adolescents over the past years.

Tables 15 to 18 in the appendix show a breakdown of the correlations between ASB and the personality dimensions of P, E, N and L by school and sex. The correlations between ASB and P, E, N and L are as follows:

TABLE 3.8

	P	E	N	L
ASB	.614	.339	.008	-.559

A very strong positive relationship is evident between P and ASB as replicated from previous studies. E also shows a strong positive relationship with antisocial behaviour. This has not been a consistent finding in other studies, although E has been shown to be a positive indicator of antisocial behaviour particularly with adolescents. N shows an almost negligible relationship with ASB. It has been suggested (Eysenck, 1977a) that as the subjects increase with age, N becomes significantly more related to criminality, while E becomes less of a significant influence. L shows a very strong negative correlation with antisocial behaviour.

A principal components analysis was run on the 55 items of the ASB. After an orthogonal varimax rotation, eleven factors emerged. A summary of the factors is shown in Table 19 in the appendix. The first factor can be identified as "serious crimes" with heavy loadings on items (see appendix Table 14)such as (22) breaking into private property to steal something, (32) hitting a teacher, (51) taking an unknown person's car or motorbike for joyriding,

(52) planning well in advance to get into a house or flat to steal valuables and carrying the plan through, (53) taking a pedal cycle belonging to an unknown person, and keeping it, and (54) stealing goods or money from slot machines, juke boxes, or telephones.

The second factor could easily be identified as "smoking". Unlike the crimes expressed in the first factor, smoking is an age restricted behaviour which is unlawful and unaccepted for children under 16. Although it is not a major crime, it represents a criminal propensity in children. Heavy loadings are noted for items (4) smoking during school hours, (35) buying cigarettes to smoke yourself, and (49) smoking cigarettes.

The third factor could be labelled as "petty crimes" or "misbehaviour". Items loading the highest on this factor were; (1) letting off fireworks in the street, (2) riding a bicycle without lights after dark, (10) breaking windows in empty houses, (18) trespassing anywhere you are not supposed to go such as railway property, private gardens, empty houses, and (39) taking fruit which does not belong to you from a garden or orchard. Almost all of the subjects admitted to having done at least one of the above items.

The fourth factor could be classified under the general heading of "stealing". Items such as (9) stealing things from shops or out of cars, (13) stealing school property, (30) stealing money, (38) stealing things from your home, and (43) stealing anything belonging to another boy or girl, loaded all above the .4 cut off level. The fifth factor would fall under the category of "breaking school rules". High loaders were (5) staying away from school without permission, (25) being late for school, (26) refusing to do schoolwork or homework, (27) not wearing proper clothing for P.E. and Games at school. The sixth factor loaded highly on only two items and might well be identified as "destroying public property". The items were; (19) littering streets or pavements by smashing bottles or turning over dustbins, and (44) pulling up or trampling down flowers in a park or garden. The more serious item, (14) causing damage

in public places, like cinemas or buses or in the street, showed the next highest loading of .377.

Factor 7, at first glance, seems a bit difficult to interpret. The items with the highest loadings are; (4) smoking during school hours, (5) staying away from school without permission, and (16) going into a pub, or buying alcohol from a shop. This factor, however, might be categorized as "breaking age restriction rules" since none of these items would be identified as criminal for adults. Factor 8 could be called a "fighting" factor although only one item showed a loading above .4, (24) getting into fights. Items (11) belonging to a group who go around together, make a row and sometimes get into fights or cause a disturbance, and (15) carrying a weapon in case you need it in a fight, showed the next highest loadings lending support for the "fighting" label.

No items on factor 9 loaded higher than .4. The three highest items of (8) being cheeky to a teacher, (17) swearing at a teacher, and (29) shouting in lessons, suggest a factor which represents actions against teachers. Factor 10 also showed no loading above .4. Items such as (13) stealing school property, (29) shouting in lessons, (41) doing things to people as a joke, like pushing them into the water or pulling their chair away as they sit down, and (47) damaging school property suggests disruptive school behaviour. The final factor loads significantly on only one item which is (13) taking drugs. Surprisingly, no other items were even closely related to it.

In a principal components analysis using only P, E, N, L and ASB, two dominant factors emerged. The first factor showing 84 per cent of the variance, loaded strongly on ASB, P and (negatively) L. The second factor loaded highly on E and negatively on N. The scatter plot, as an option on the SPSS programme, showed all four personality dimensions situated orthogonally on the four axes with ASB lying near P on the right horizontal axis.

Previous studies (Burgess, 1972b; Allsopp, 1975; Powell, 1976) have examined antisocial behaviour in extreme personality groups. Table 3.9 shows the mean ASB score for each of the 27 cells dividing P, E and N into high, medium and low groups. The groupings were determined by separating the range for each personality dimension into as equal thirds as possible guaranteeing relatively equal cell numbers.

As can be seen, there is a steady progression from a very low ASB mean of 8.71 'yes' responses for the -P-E-N group up to a mean of 36.94 'yes' responses for the +P+E+N cell. P and E show the most variance between groups with fewer differences noted for N.

Table 3.10 presents the 27 cell breakdown for the worst 10% on the ASB. Out of the total 142 subjects, most fall within the high P and high E categories. This table lends strong support to Eysenck's theory of criminality.

3.3 SUMMARY OF J.E.P.Q. AND ASB RESULTS

The results on the J.E.P.Q. and the ASB were found to be in agreement with the stated hypotheses and coincided with the findings of previous studies. The P, E, N and L scores were within the standardization norms. There were mild correlations noted between E and P, E and N, E and L and L and P. The low correlation between N and L helped to suggest that there was little faking on the questionnaire measures.

The boys scored predictably higher than the girls on the ASB scale. Although the School 1 boys scored significantly lower than the School 3 boys, the School 1 girls showed higher scores on the ASB than the School 3 girls. Mean response differences were noted between groups on certain items, owing, in part, to the differences in location of the schools. A comparison of the ASB scale with similar studies using the questionnaire items revealed an overall increase in the reported frequency of antisocial behaviour for the same age groups.

TABLE 3.9

MEANS ON SELF-REPORT ANTISOCIAL BEHAVIOUR QUESTIONNAIRE BY PERSONALITY

	+P			=P			-P		
	+E	=E	-E	+E	=E	-E	+E	=E	-E
+N	36.94	29.85	27.00	22.91	19.27	18.37	16.95	14.63	9.95
=N	34.46	30.74	26.83	22.72	20.51	18.32	19.33	15.50	11.71
-N	32.71	30.75	27.68	22.97	20.36	15.95	16.46	12.25	8.71

ANOVA F = 300.61 P < .001

TABLE 3.10

WORST 10% ON ANTISOCIAL BEHAVIOUR QUESTIONNAIRE BY PERSONALITY

	+P			=P			-P		
	+E	=E	-E	+E	=E	-E	+E	=E	-E
+N	20	9	4	1	2	0	1	0	1
=N	22	15	4	3	1	0	1	2	0
-N	24	11	9	8	2	0	2	0	0

N = 142 SCORING 36 AND ABOVE

The correlations between ASB and the four personality dimensions are in the predicted direction of Eysenck's theory of criminality. The P and L scales showed the highest correlations with self-reported delinquency. The E scale also showed a very strong positive relationship with the ASB scale. N, although significant, was the least strong of the four factors in predicting deviancy.

A factor analysis was run on the ASB scale and support was shown for the use of the self-report method. Dividing the subjects within the 27 cells of high, medium and low personality groups presented further support for the theory that +P+E+N subjects show a greater propensity toward delinquency and antisocial behaviour compared with low scorers on P, E and N.

CHAPTER 4

4.1 RESULTS: ANALYSIS OF STEREOTYPING TEST

The Stereotyping Test, as reviewed in Chapter 2, is presented in the appendix (p. 154). The twelve models are shown on the following page. Each subject was instructed to pick one male and one female model which he thought best represented each of seventeen concepts. The following concepts are given in the order presented in the test: 1) Likes parties, 2) Stays out late, 3) Clever, 4) Young, 5) Good looking, 6) Old, 7) Has few friends, 8) Like I will be, 9) Likes kissing, 10) Takes risks, 11) Smokes cigarettes, 12) Gets into trouble, 13) Enjoys staying home, 14) Has sex before marriage, 15) Steals from shops, 16) Like I am, and 17) Gets into fights. Thus each subject would make 34 choices in matching the models with the concepts.

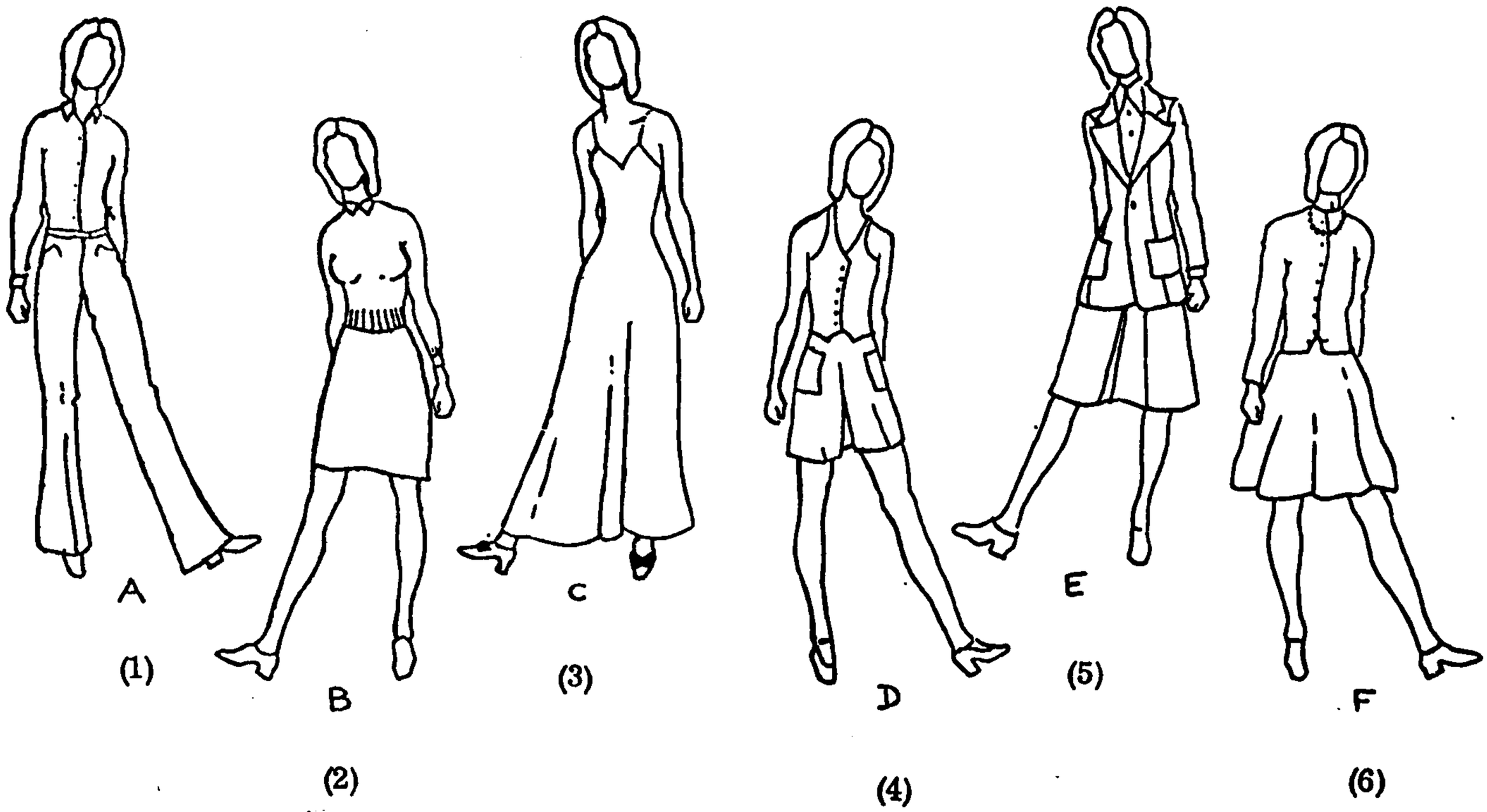
Table 20 in the appendix shows the percentage of responses for all subjects on the seventeen concepts for the male and female models. Tables 21 and 22 show the responses for the girls and the boys on the female and male models.

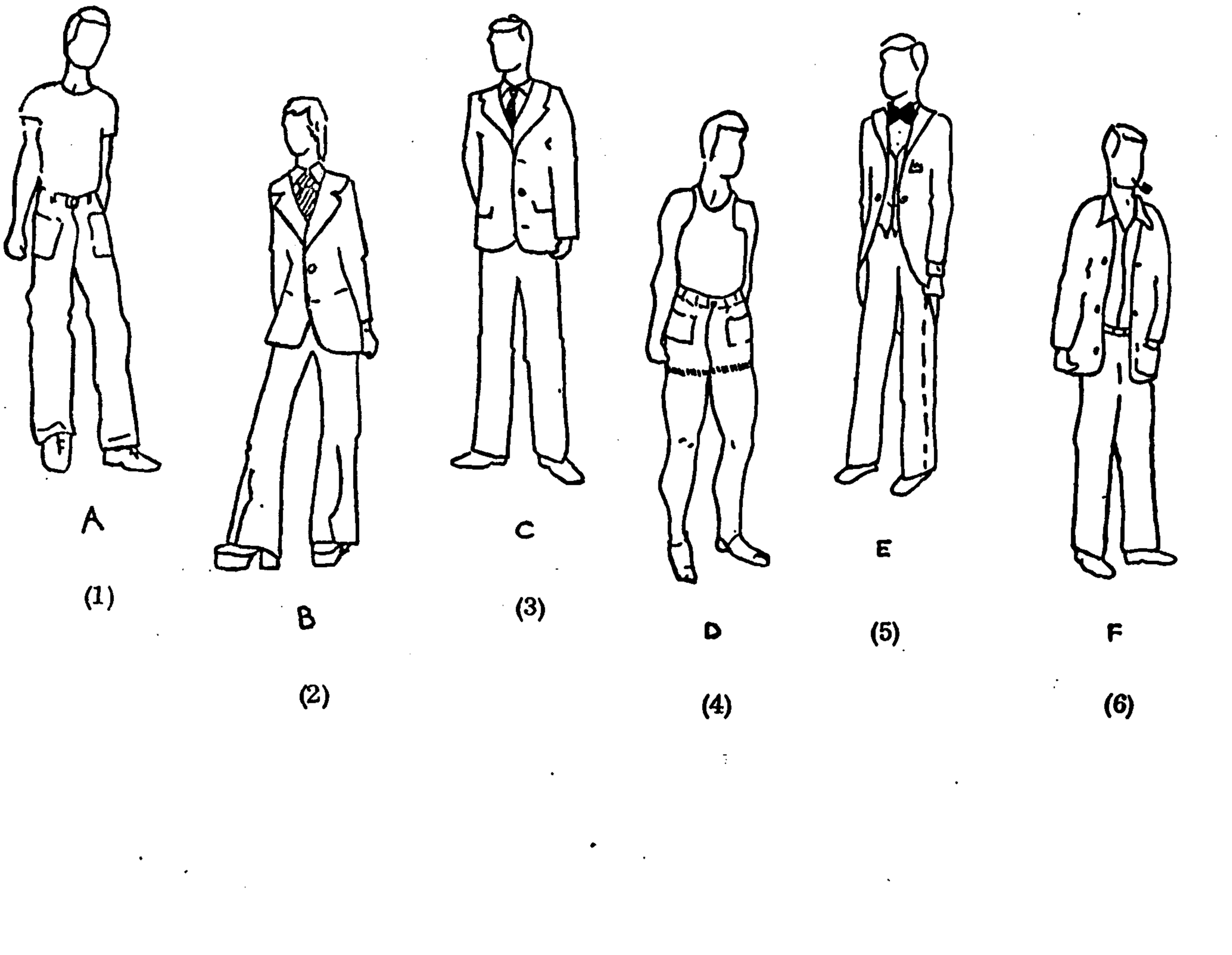
Concepts such as C1) Likes parties, and C3) Clever for the female models and C1) Likes parties, C2) Stays out late, C3) Clever, C4) Young, C10) Takes risks, C12) Gets into trouble, C15) Steals from shops, and C17) Gets into fights for the male models showed very strong response consistency across all subjects.

All of these concepts show 50% agreement and higher, which is shown on the histograms (pages 71 to 87). As can also be seen, similar to Powell's findings (1977), the male models were stereotyped much stronger than the female models.

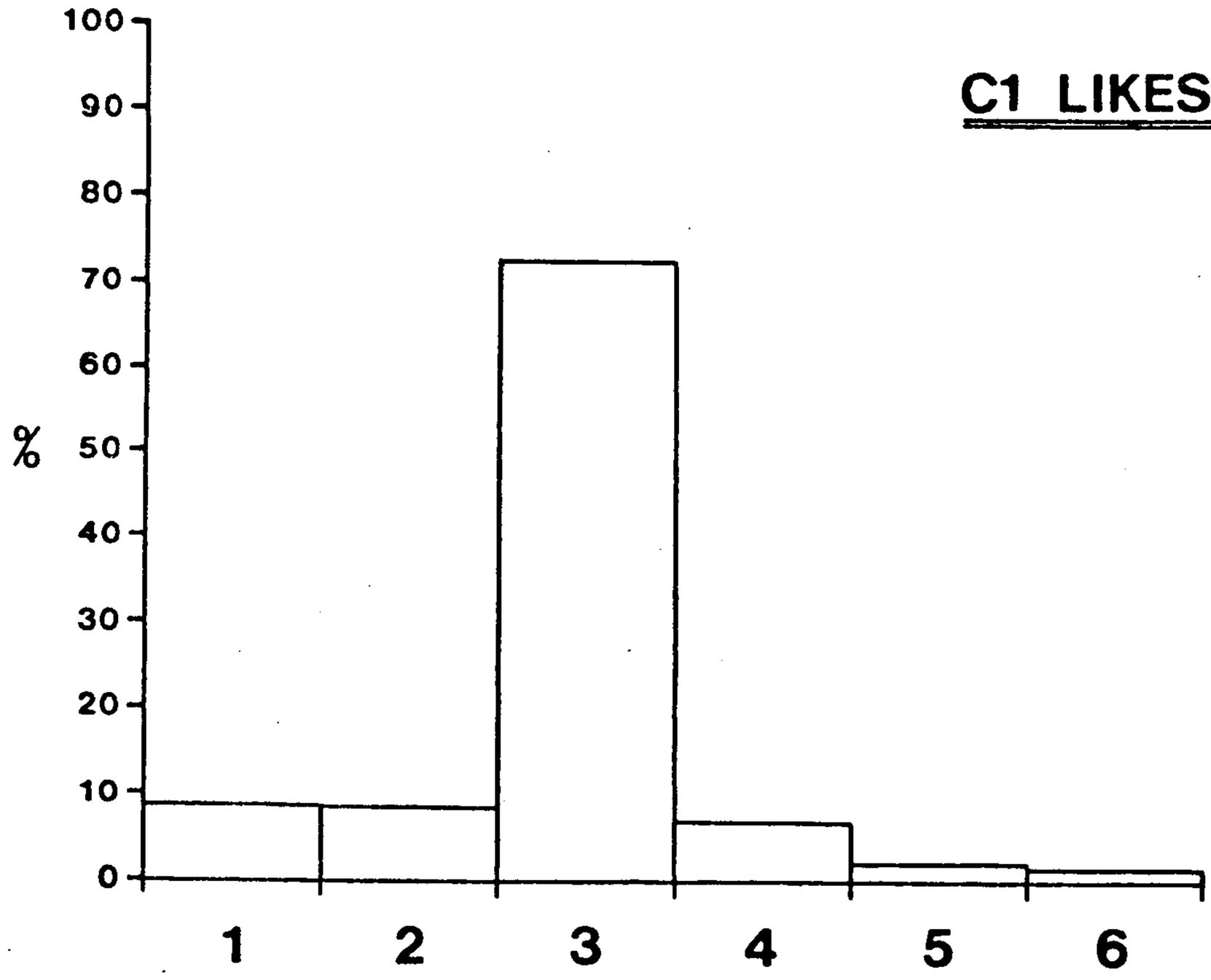
Tables 21 and 22 in the appendix show that for almost all of the concepts, the girls were more consistent (stereotyped more) in their choices of models than the boys. Distinct differences are noted between the responses made by the girls and the boys on the concepts C5) Good looking, C7) Has few friends, C8) Like I will be, C9) Likes kissing, C11) Smokes cigarettes, C12) Gets into

Stereotyping Models

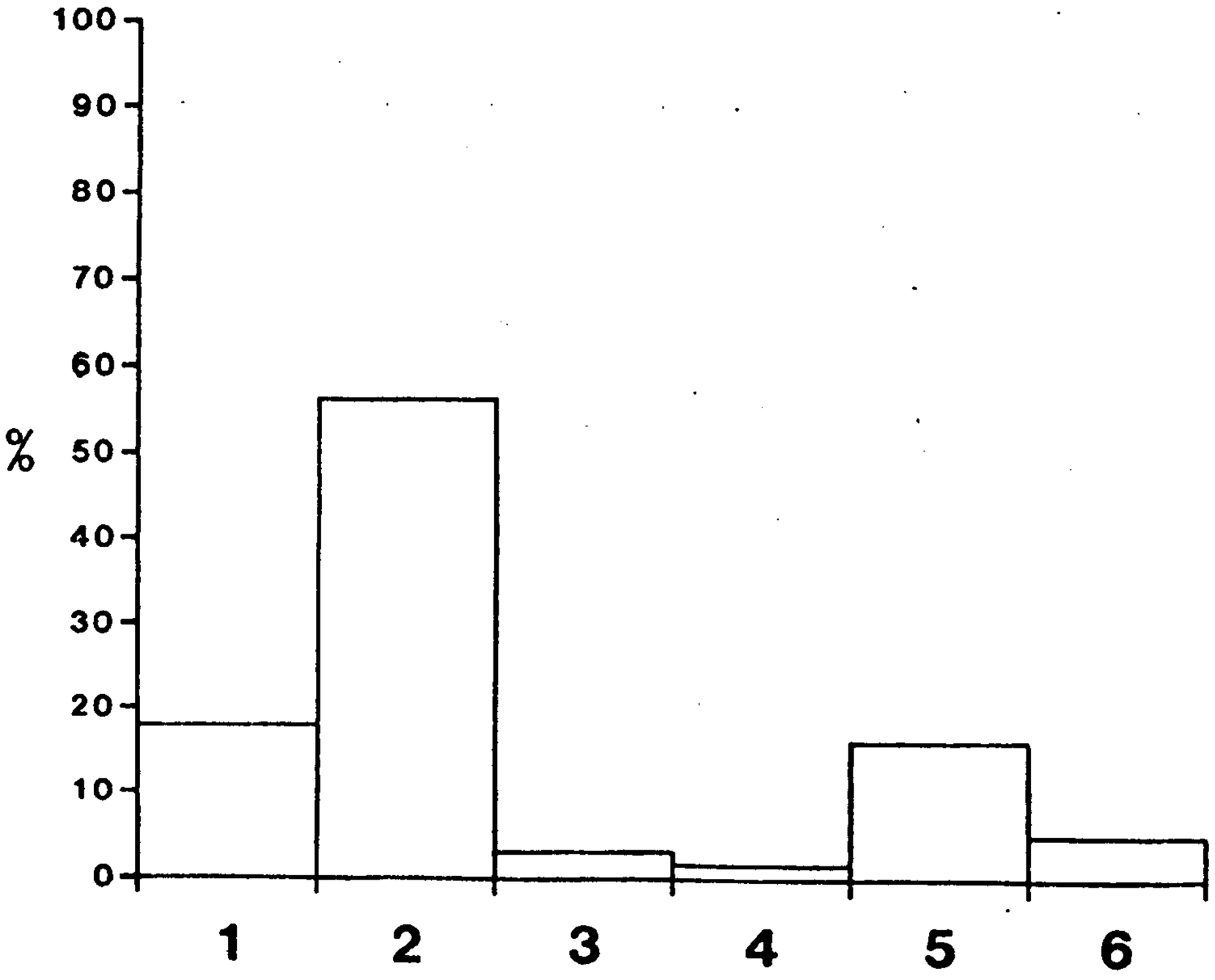




C1 LIKES PARTIES

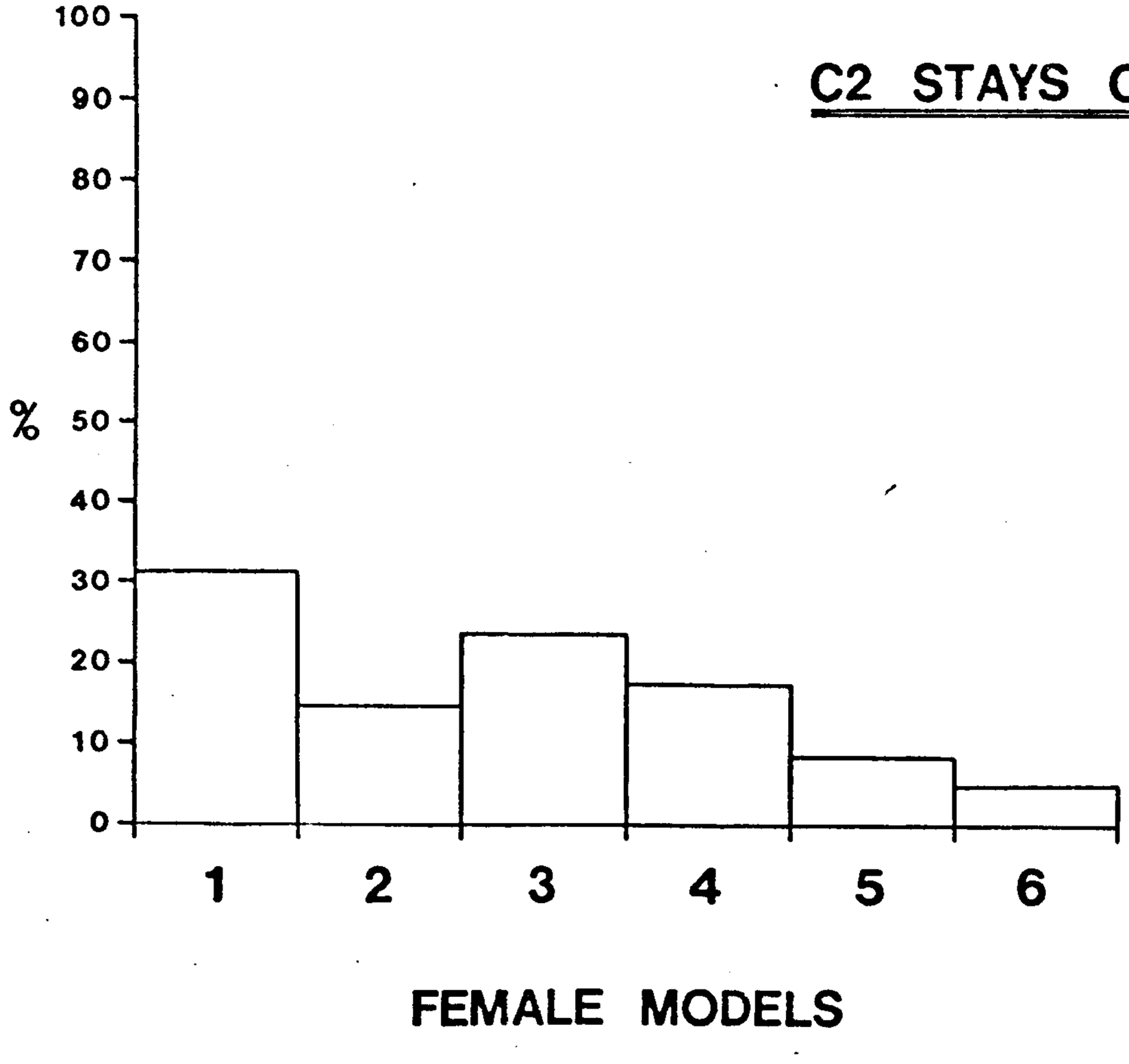


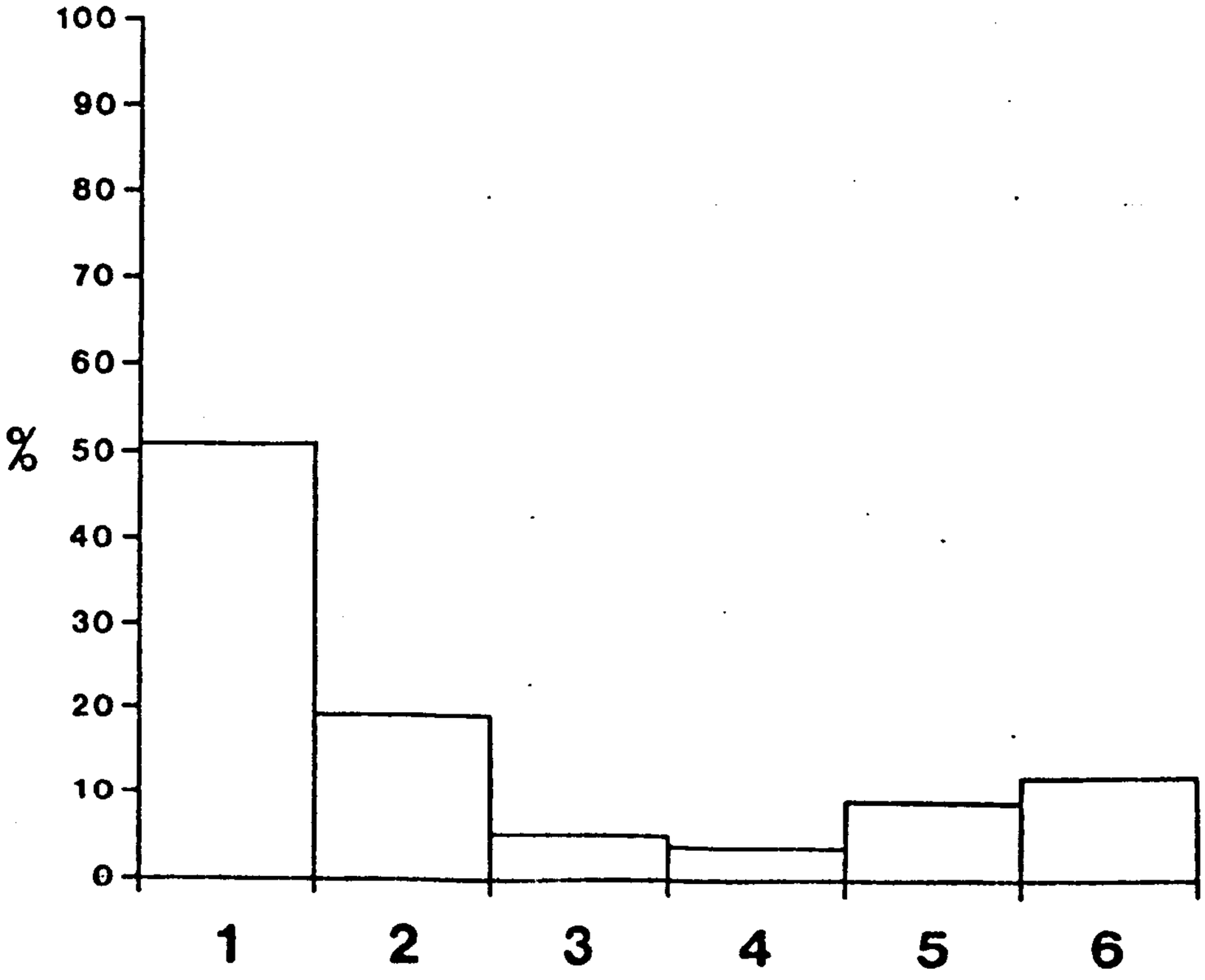
FEMALE MODELS

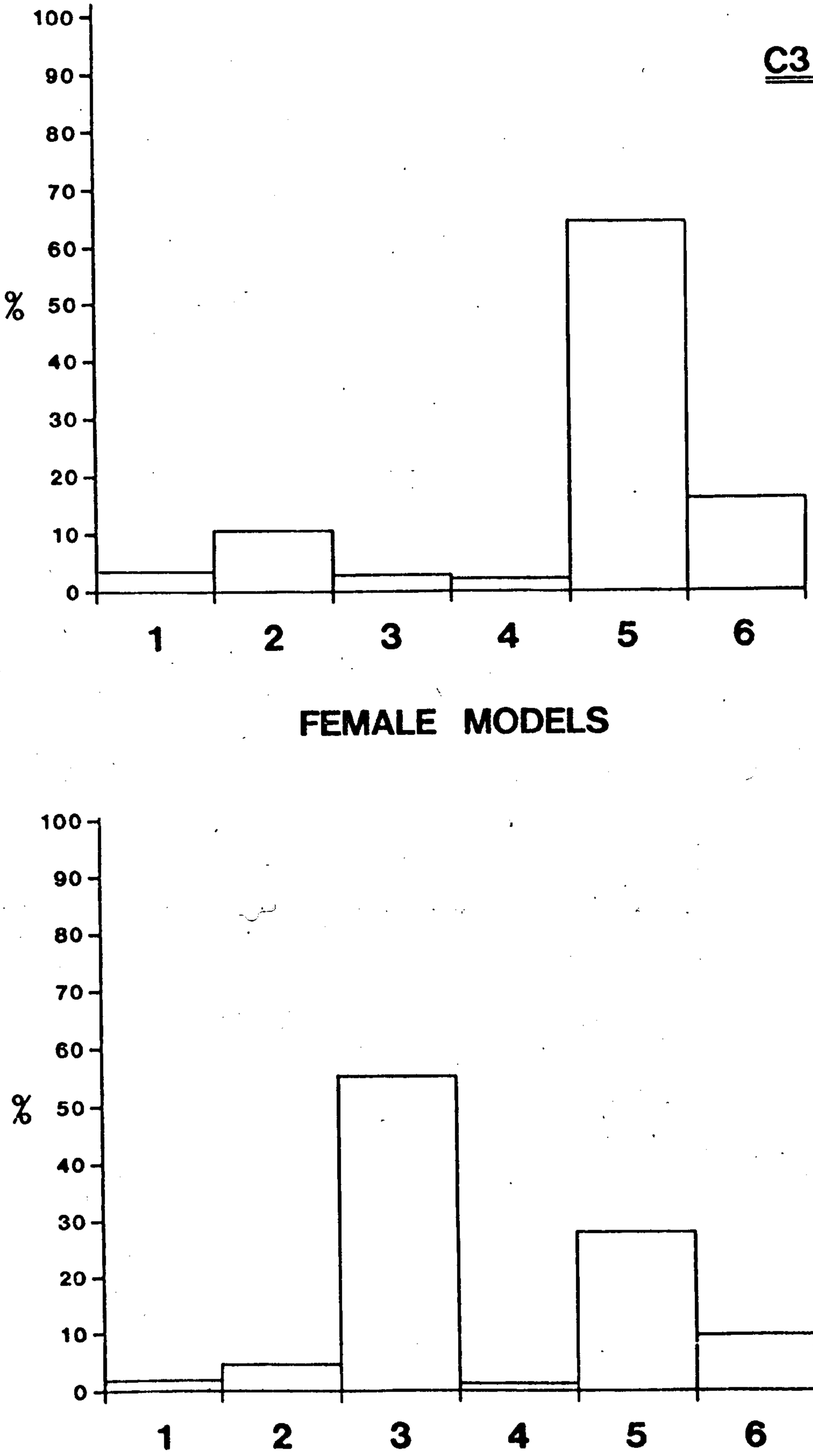


MALE MODELS

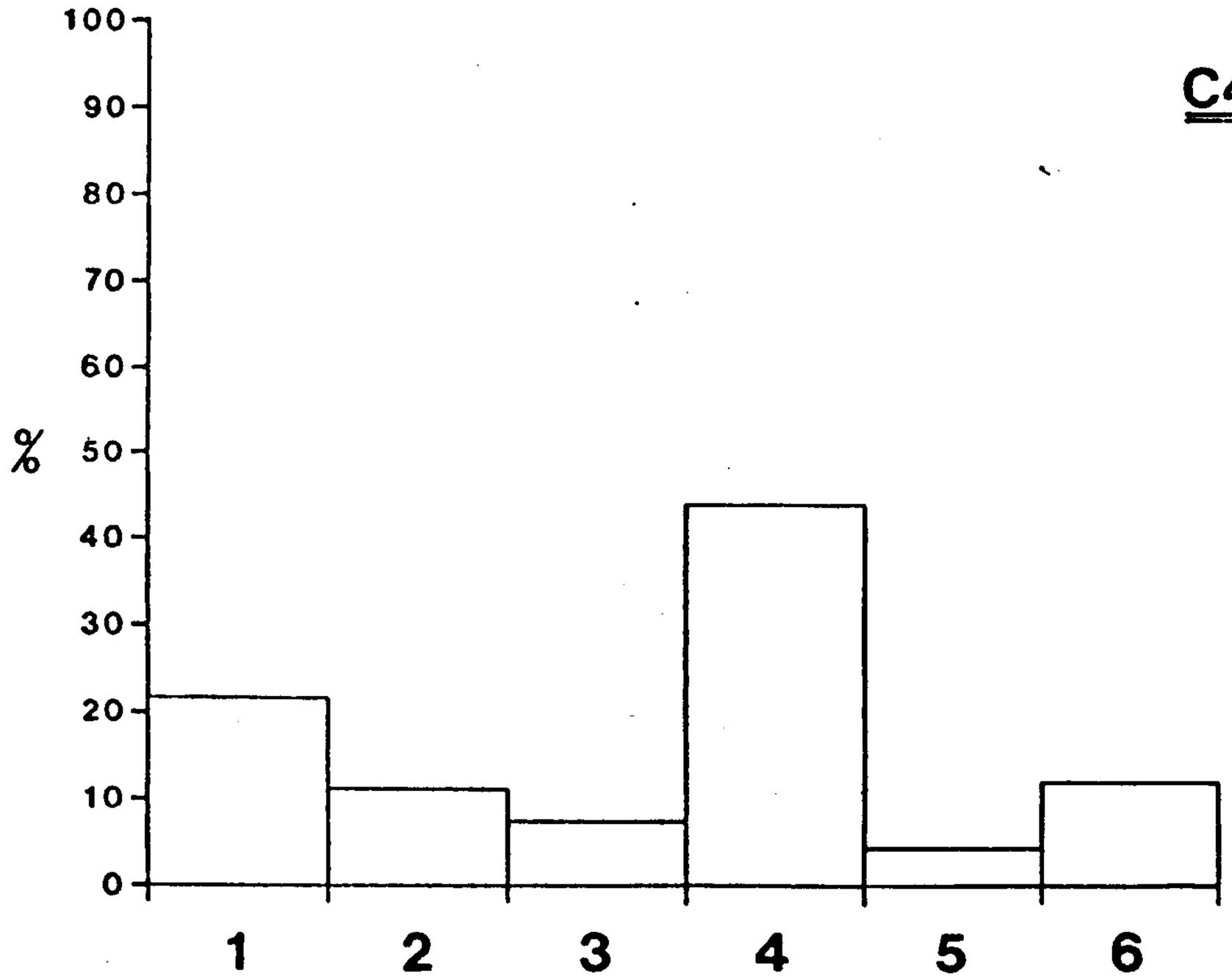
C2 STAYS OUT LATE

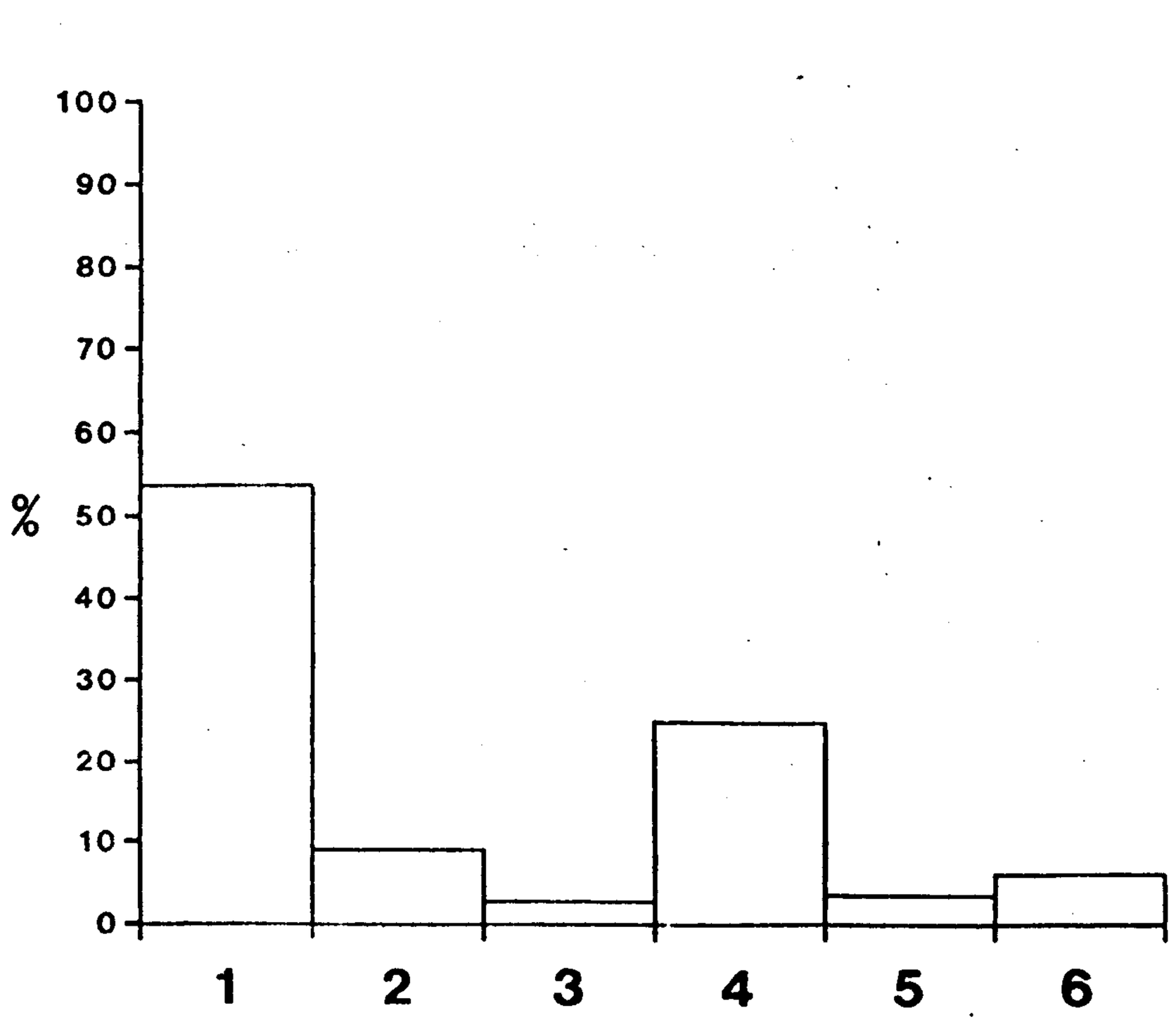




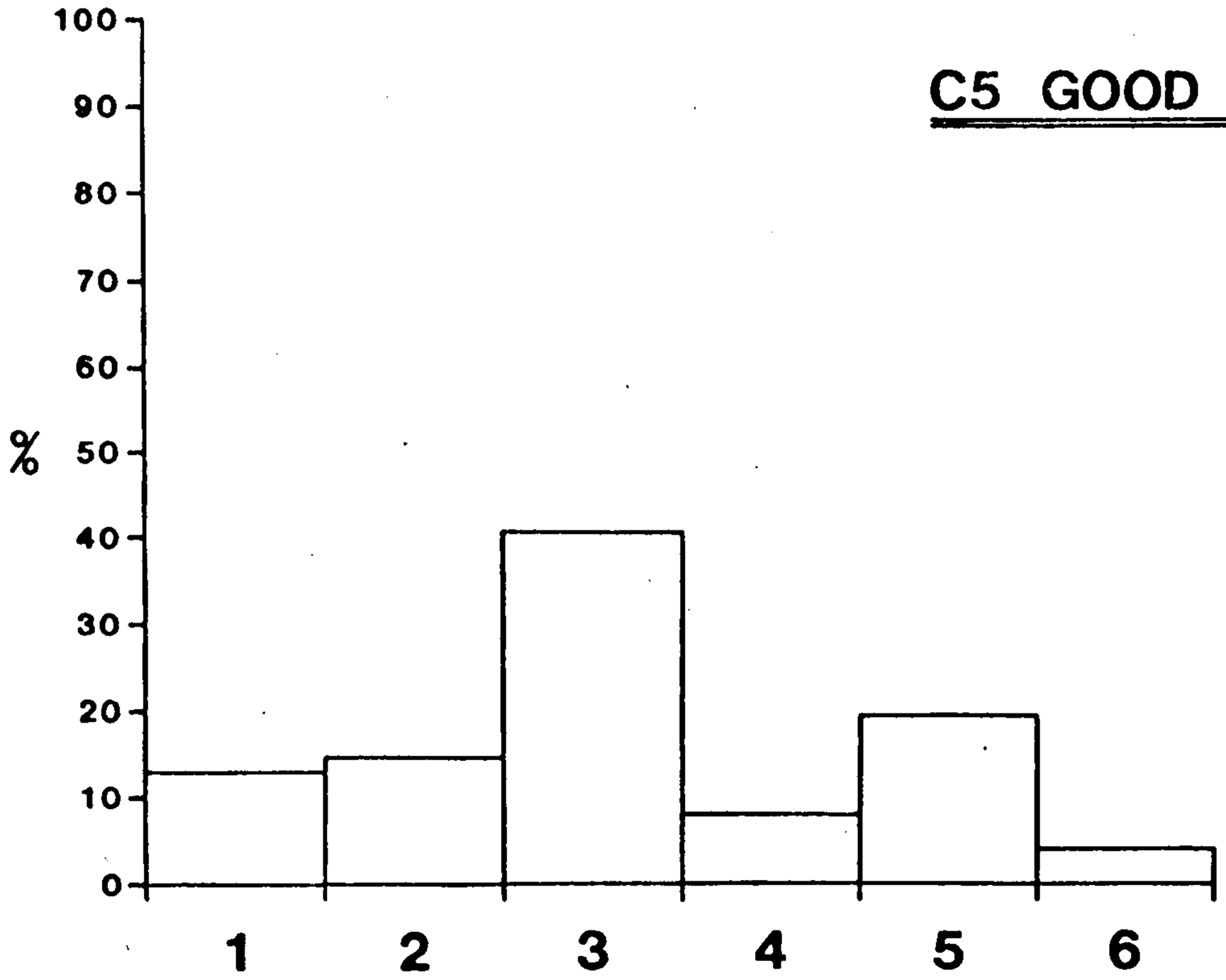

C3 CLEVER
100
90
80
70
60
50
40
30
20
10
0
%
1
2
3
4
5
6
FEMALE MODELS
100
90
80
70
60
50
40
30
20
10
0
%
1
2
3
4
5
6
MALE MODELS

C4 YOUNG

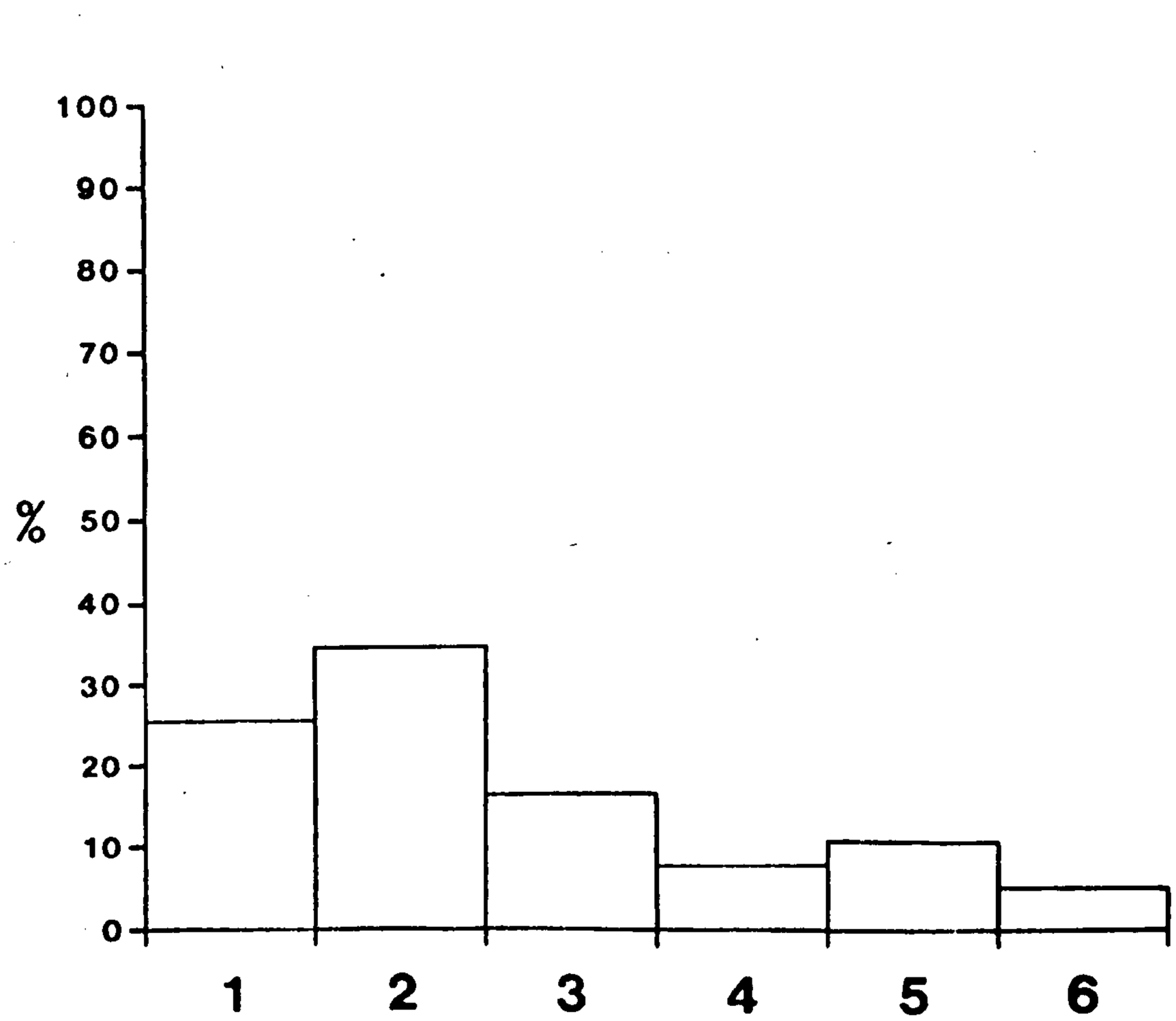

100
90
80
70
60
%
50
40
30
20
10
0
1
2
3
4
5
6
FEMALE MODELS


100
90
80
70
60
%
50
40
30
20
10
0
1
2
3
4
5
6
MALE MODELS

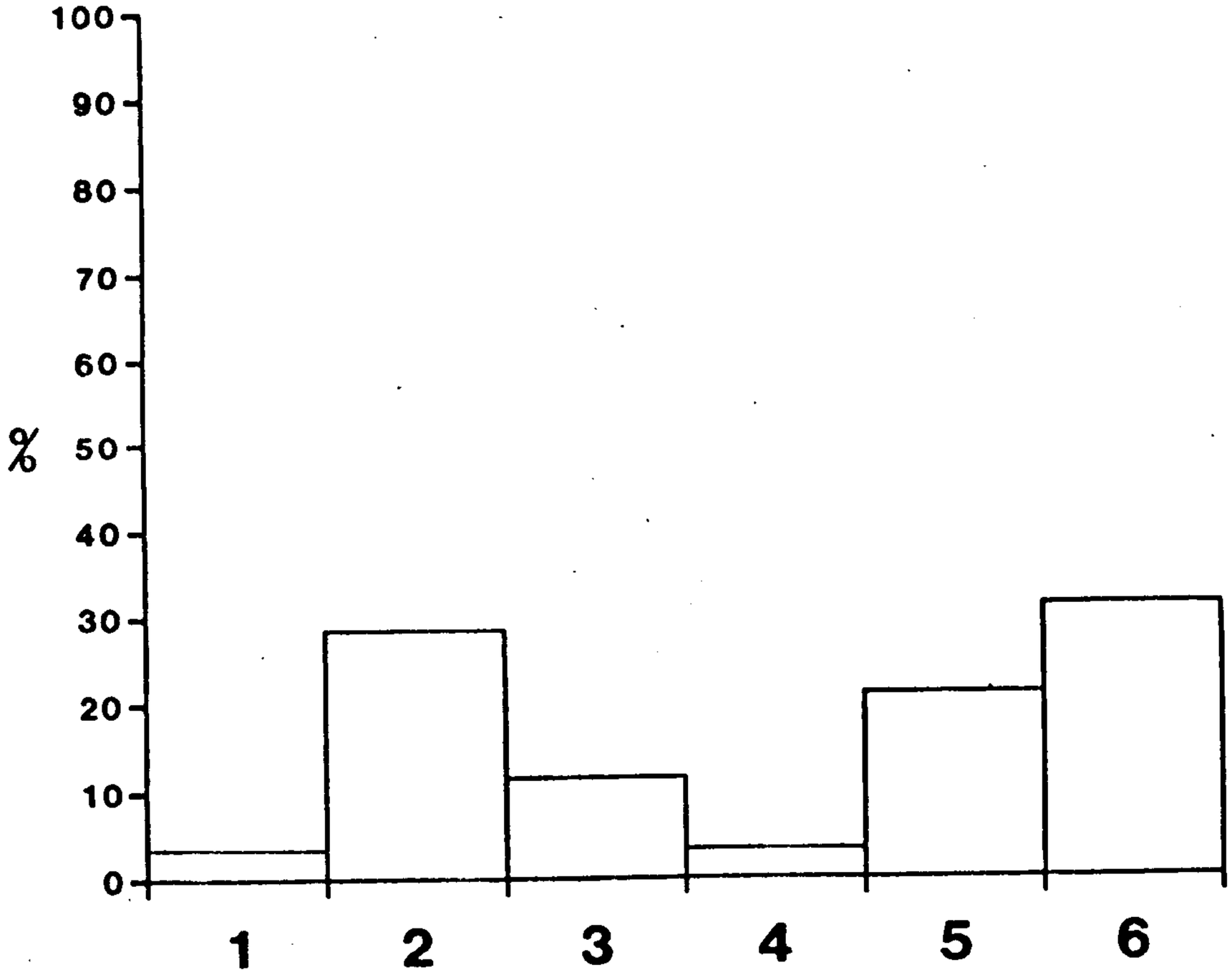
C5 GOOD LOOKING

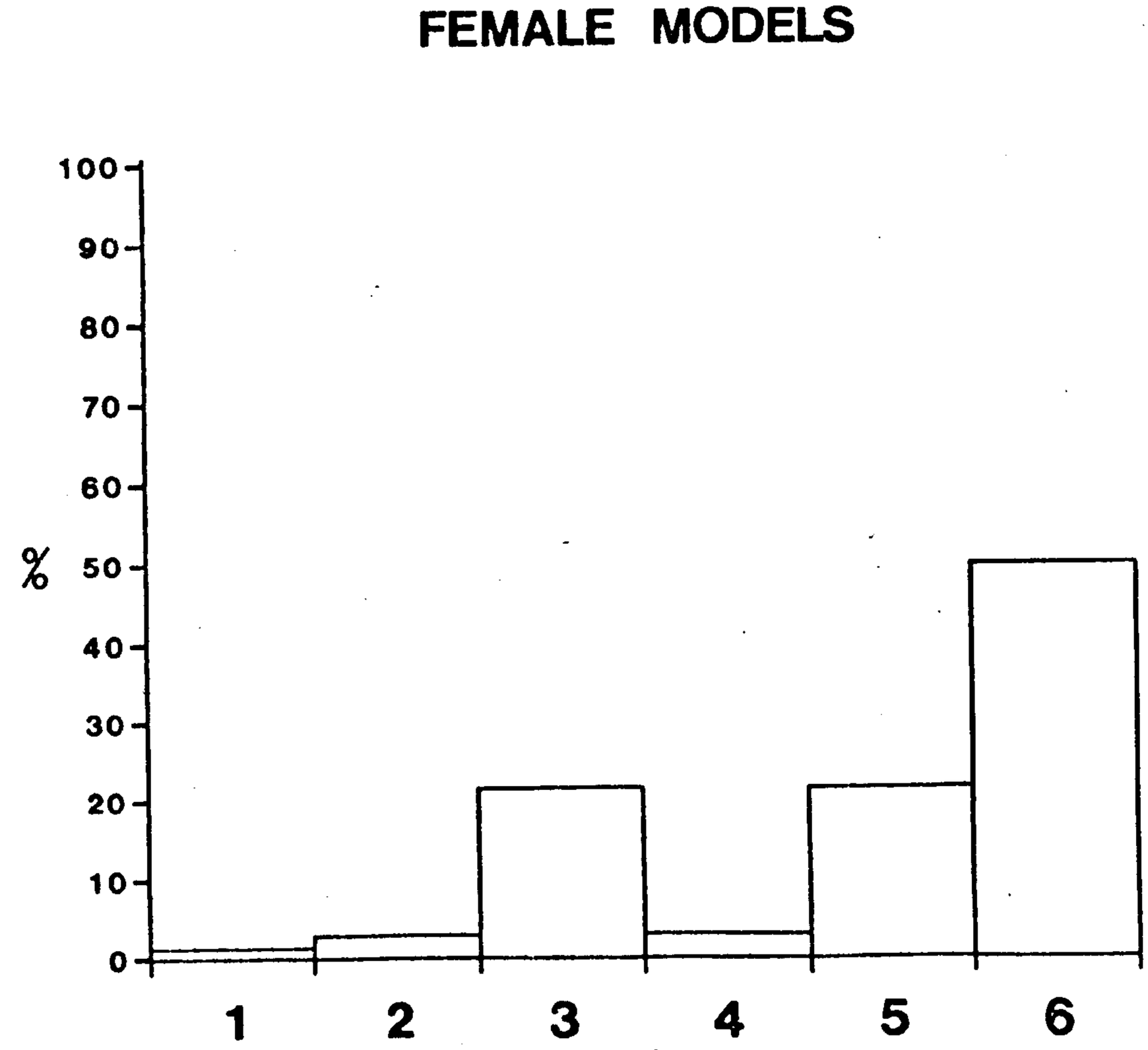


FEMALE MODELS

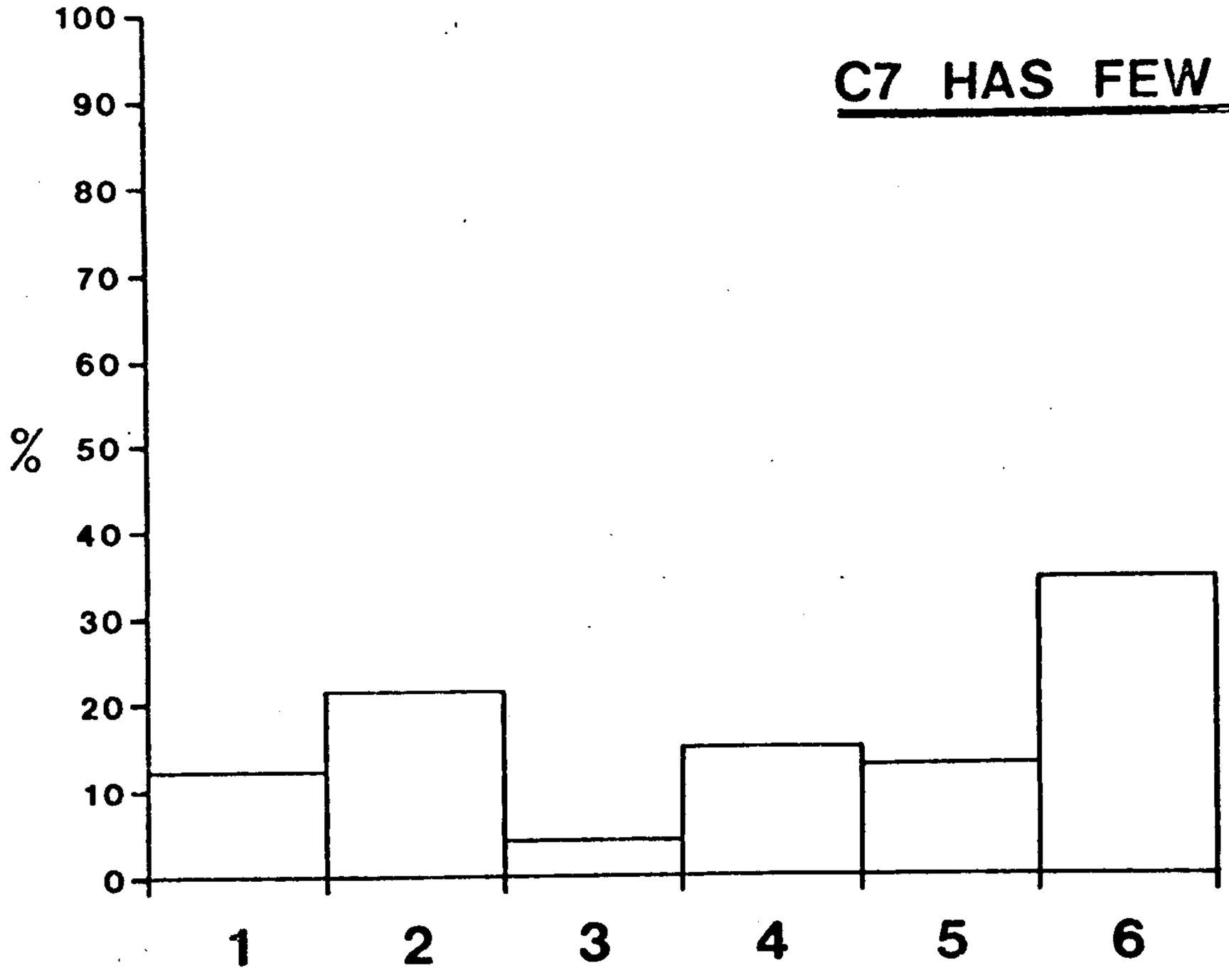


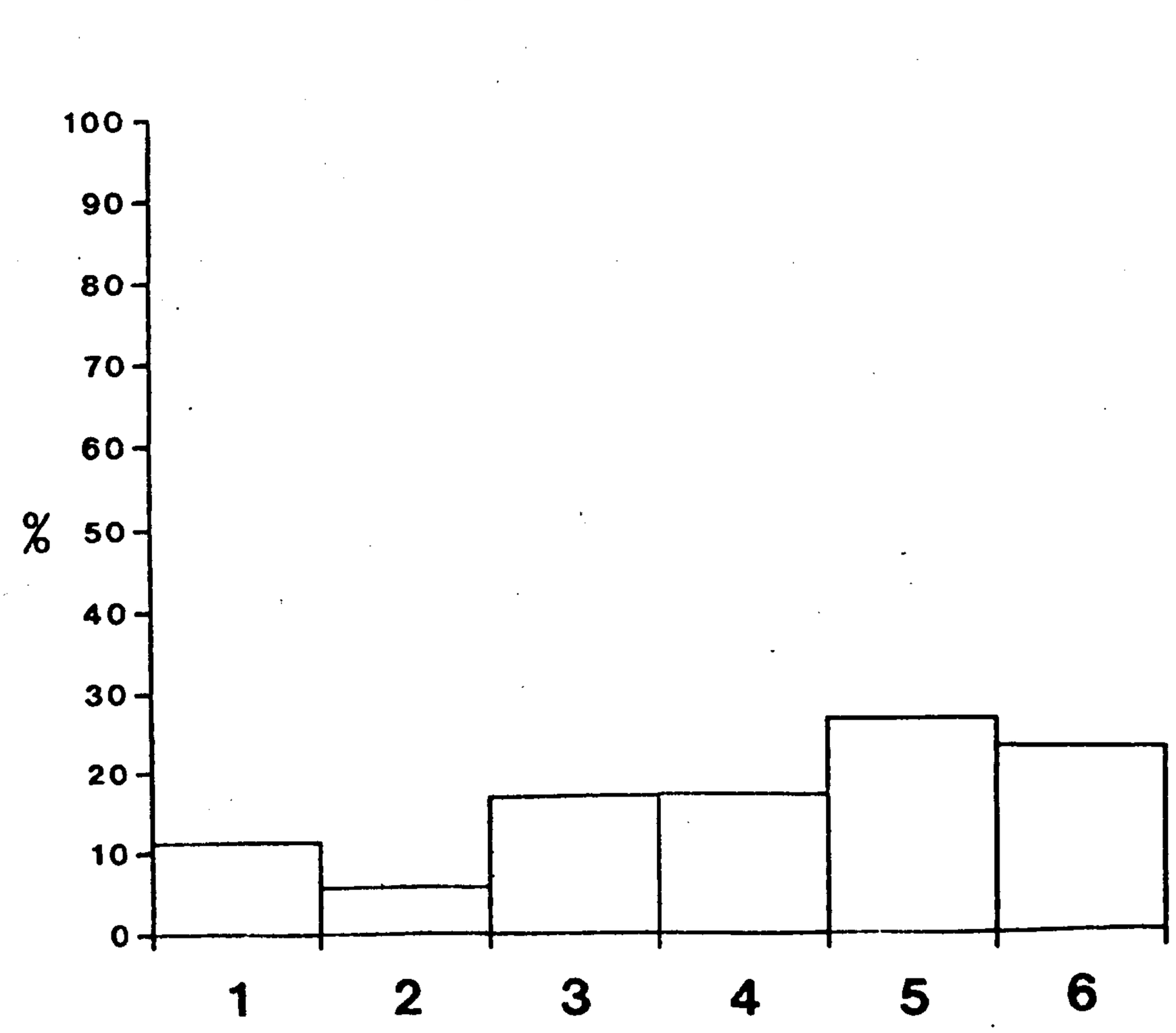
MALE MODELS


C6 OLD
100
90
80
70
60
%
50
40
30
20
10
0
1
2
3
4
5
6
FEMALE MODELS

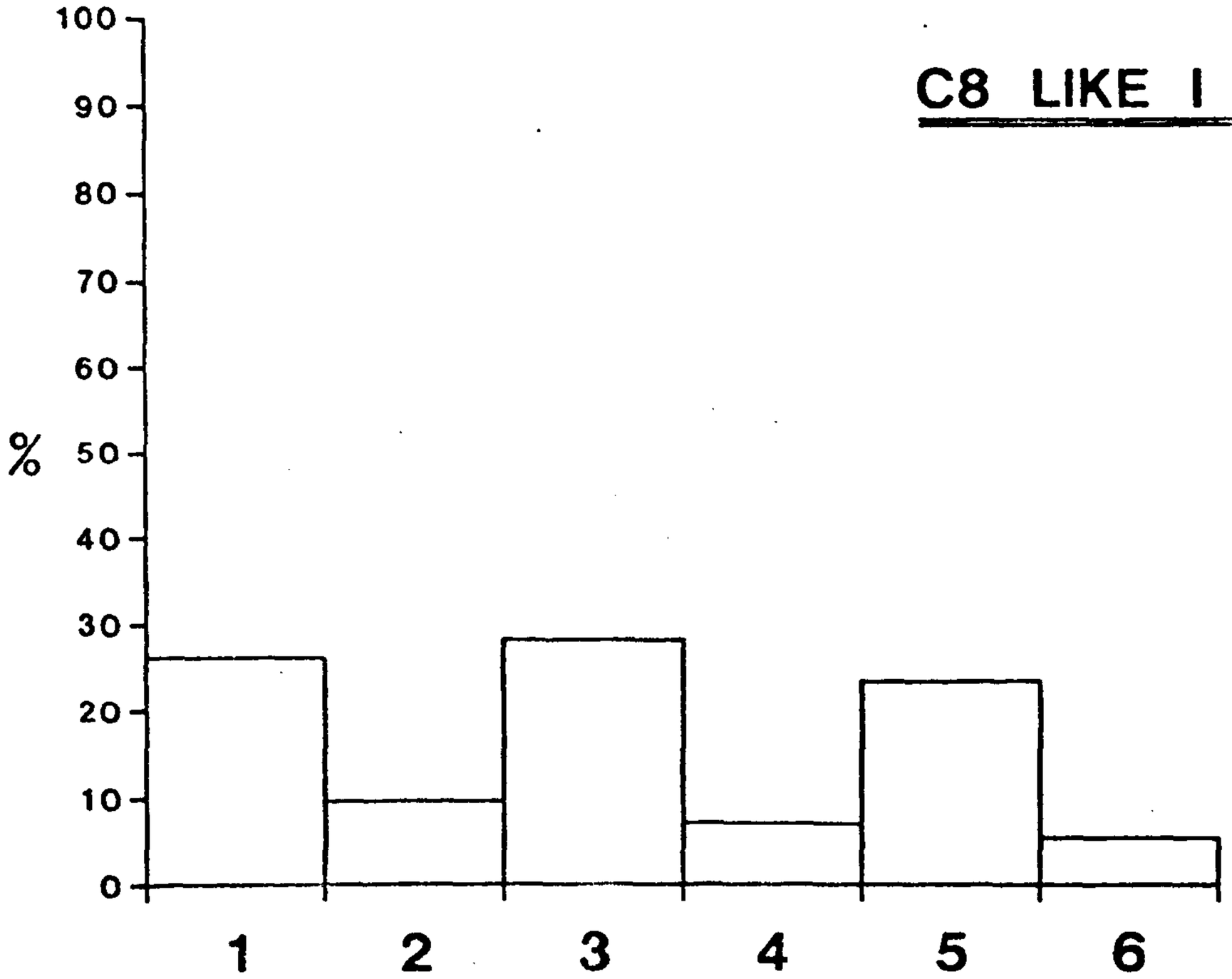

100
90
80
70
60
%
50
40
30
20
10
0
1
2
3
4
5
6
MALE MODELS

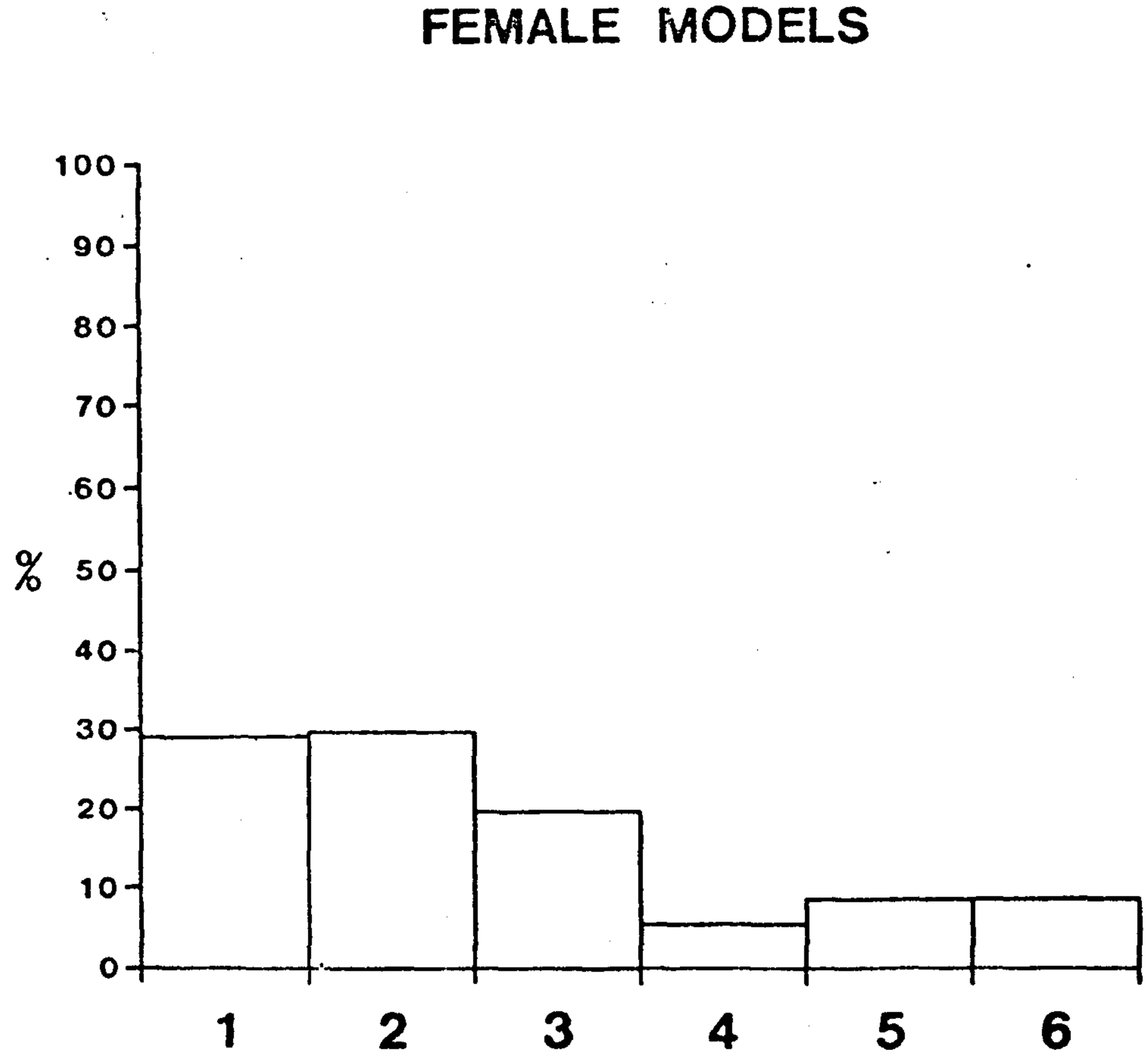
C7 HAS FEW FRIENDS



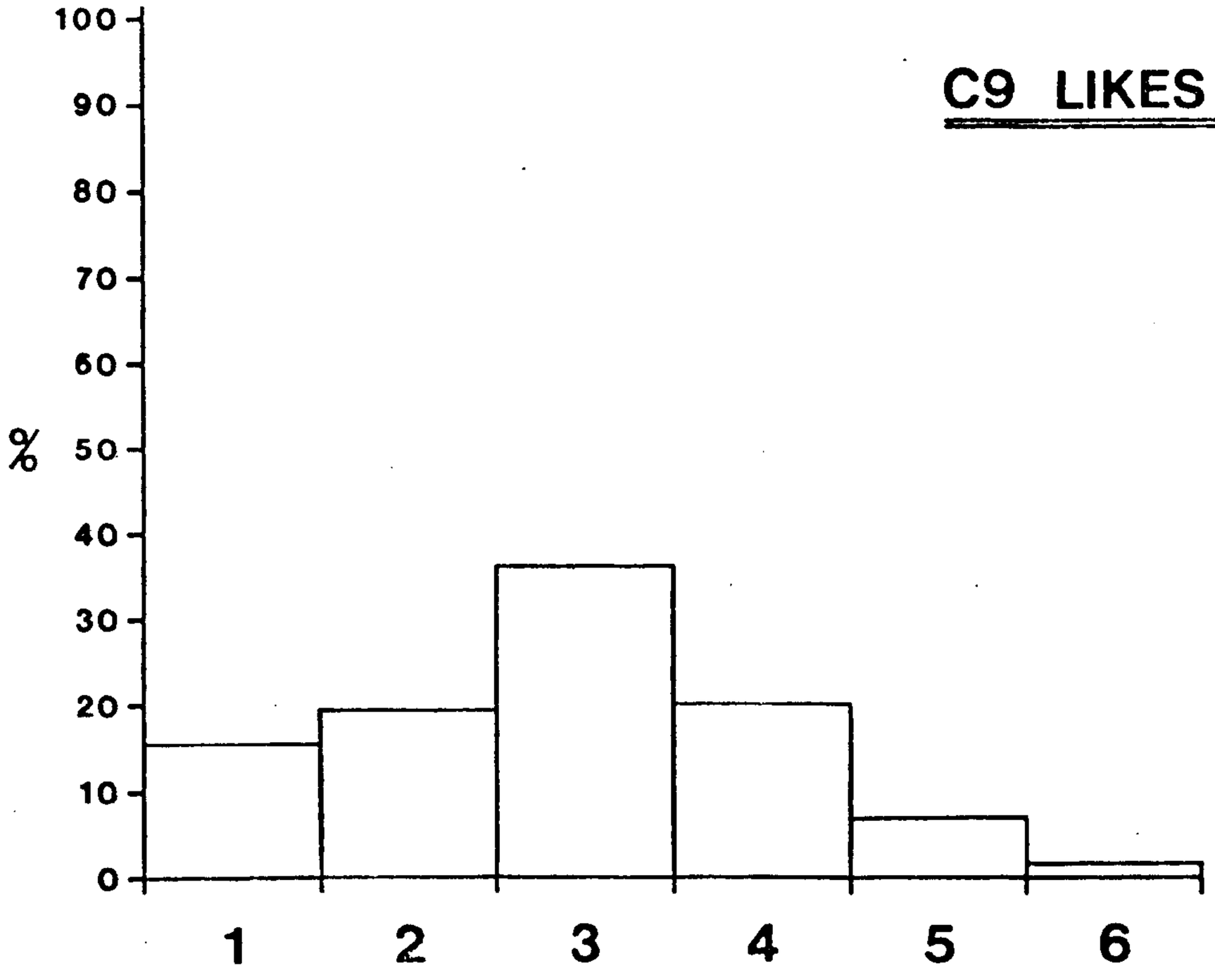


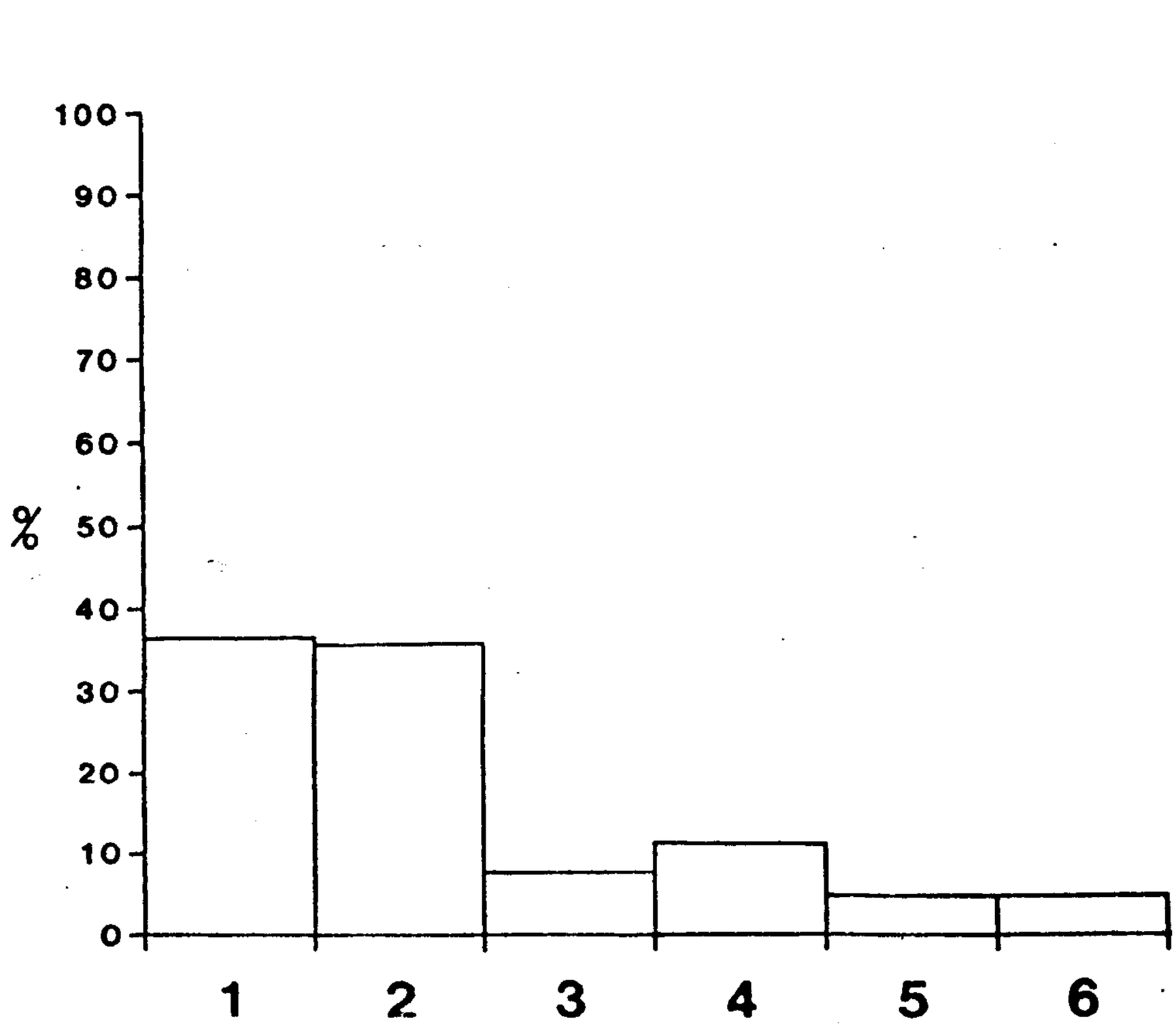
C8 LIKE I WILL BE



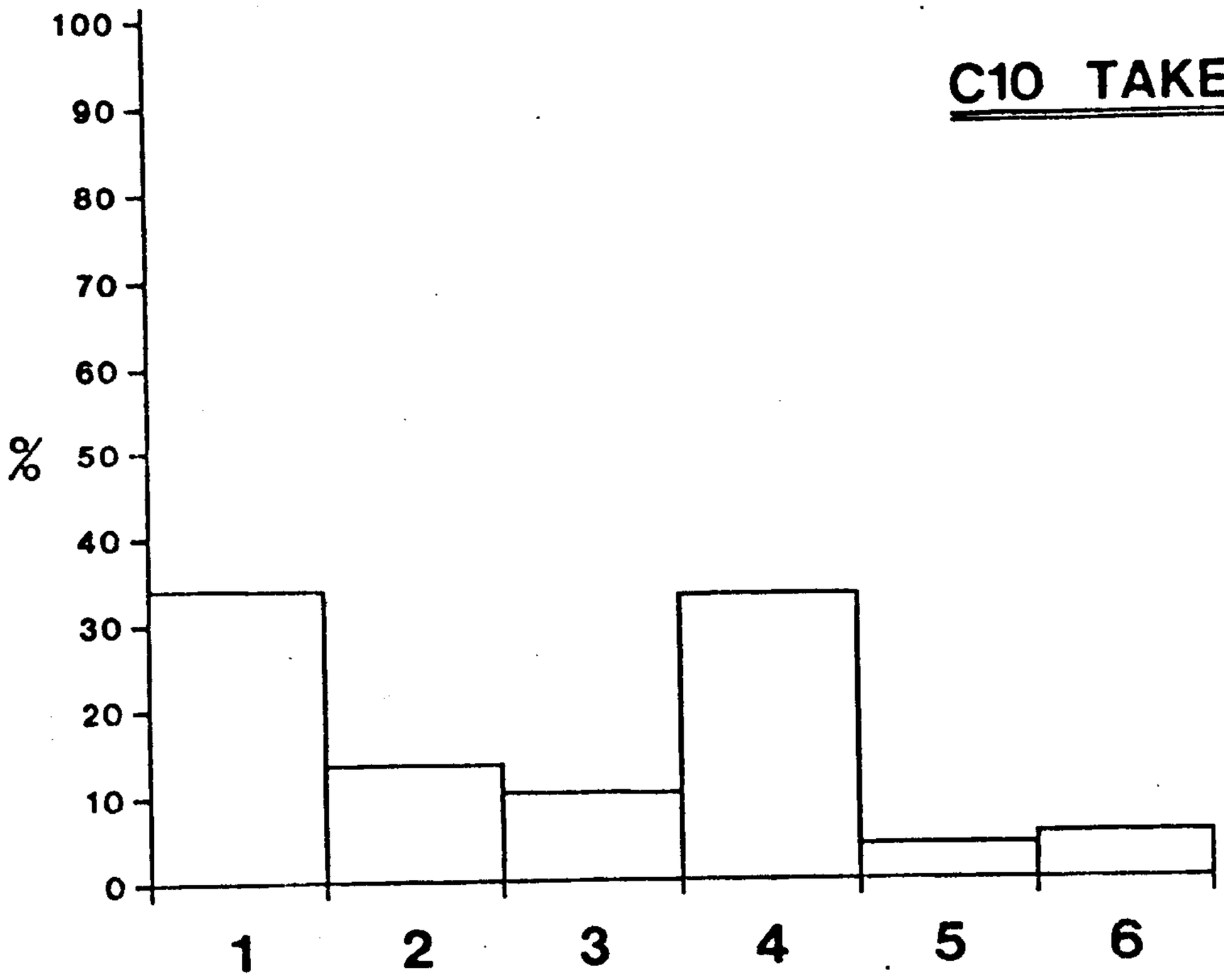


C9 LIKES KISSING

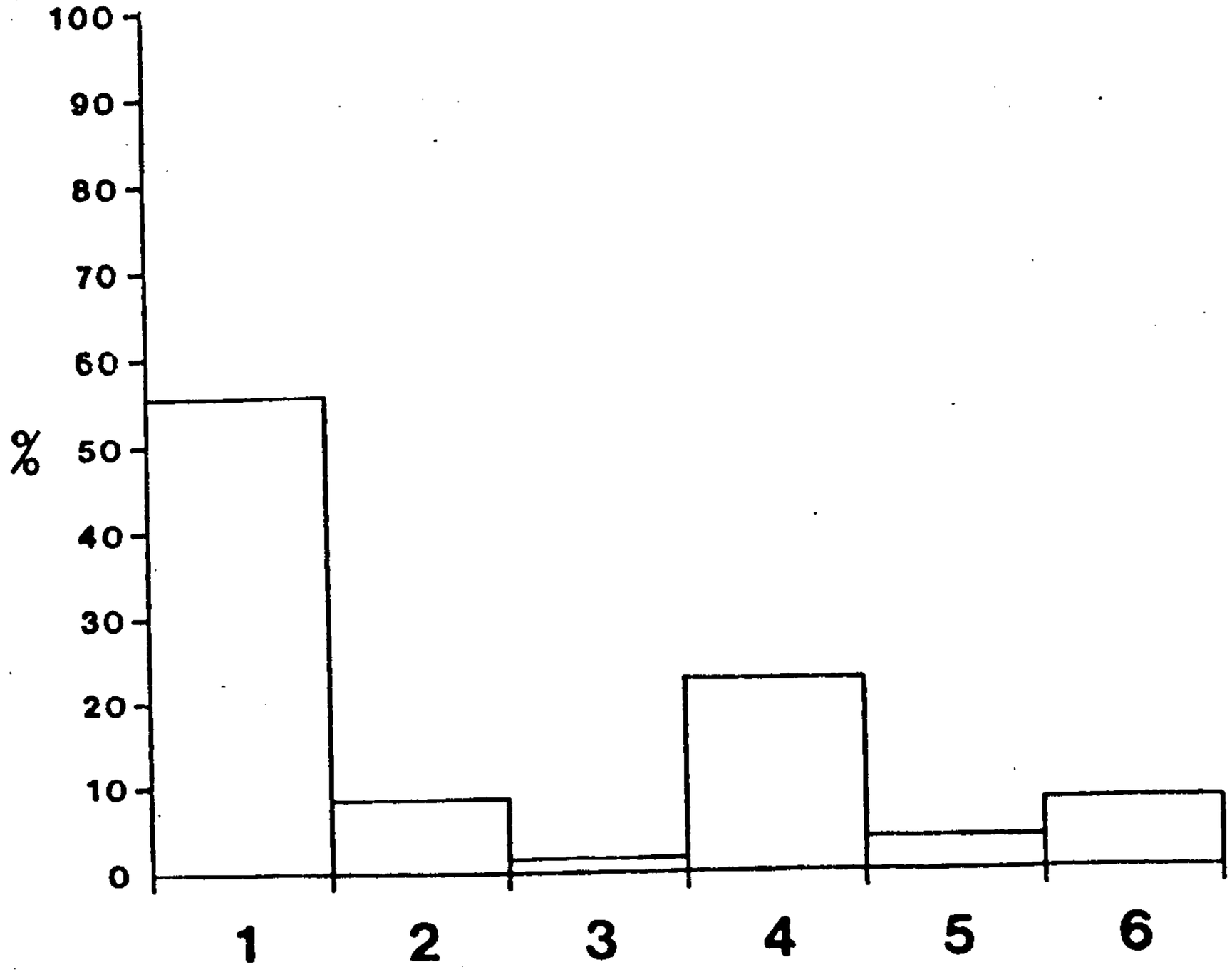




C10 TAKES RISKS

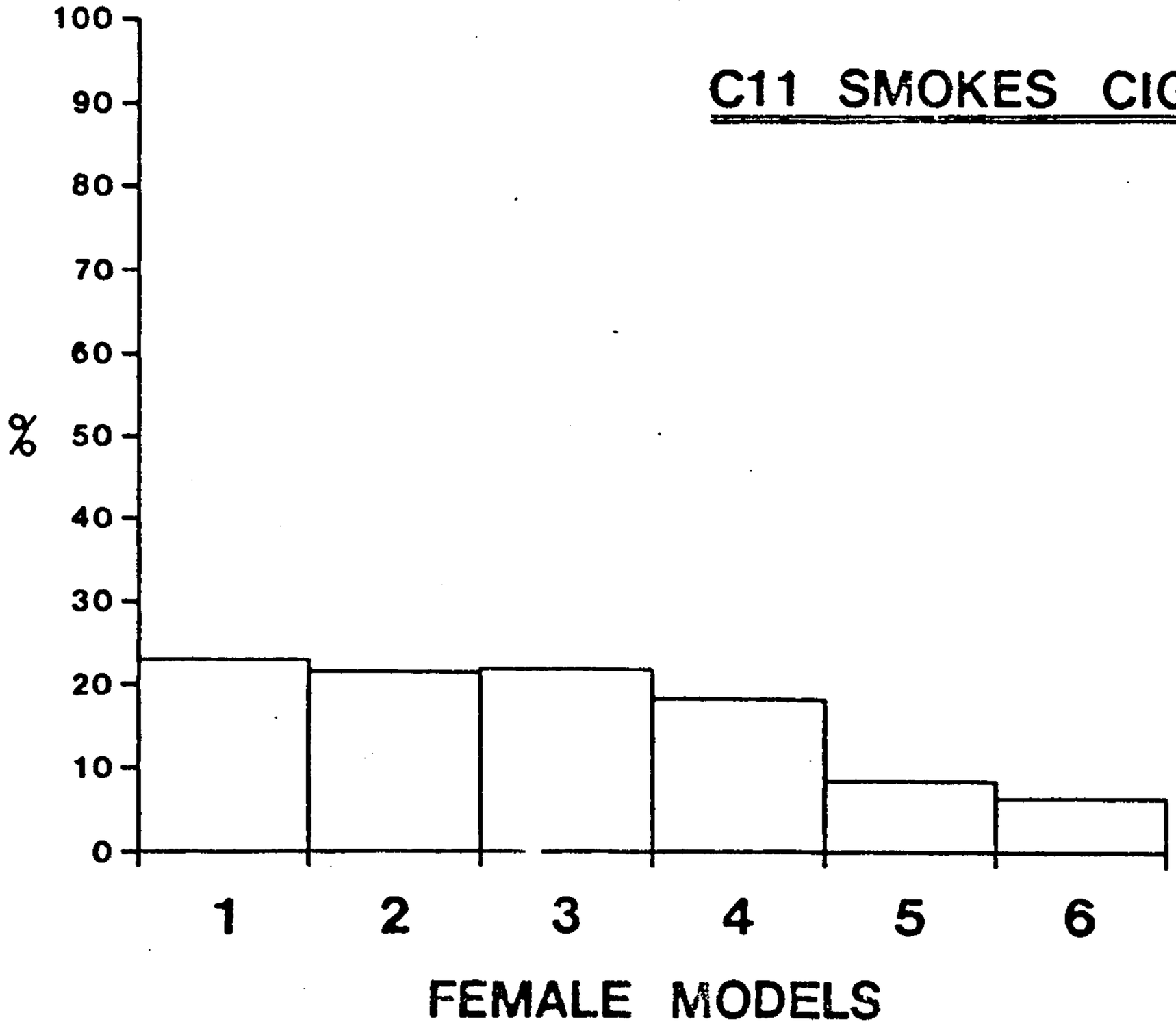


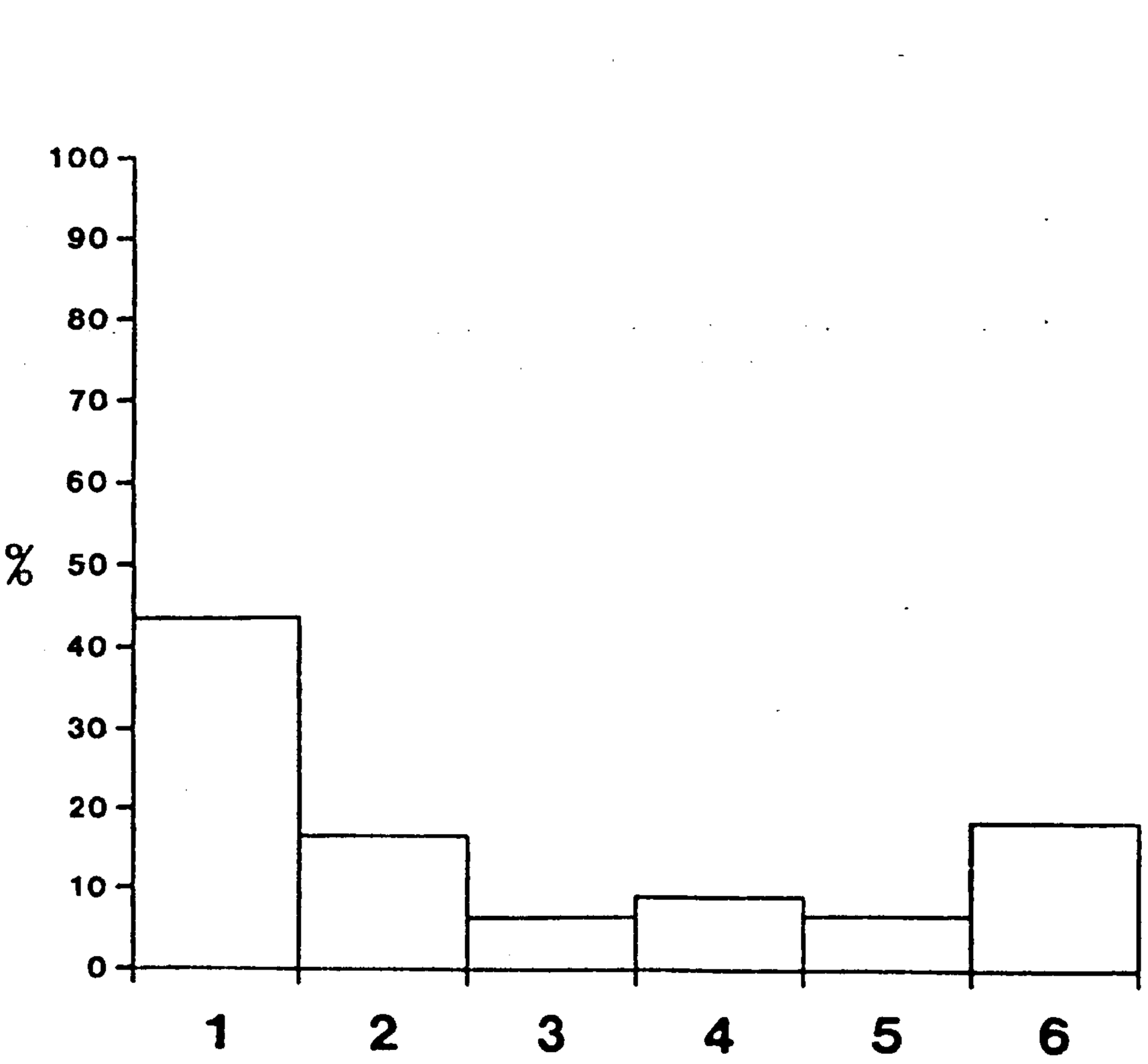
FEMALE MODELS



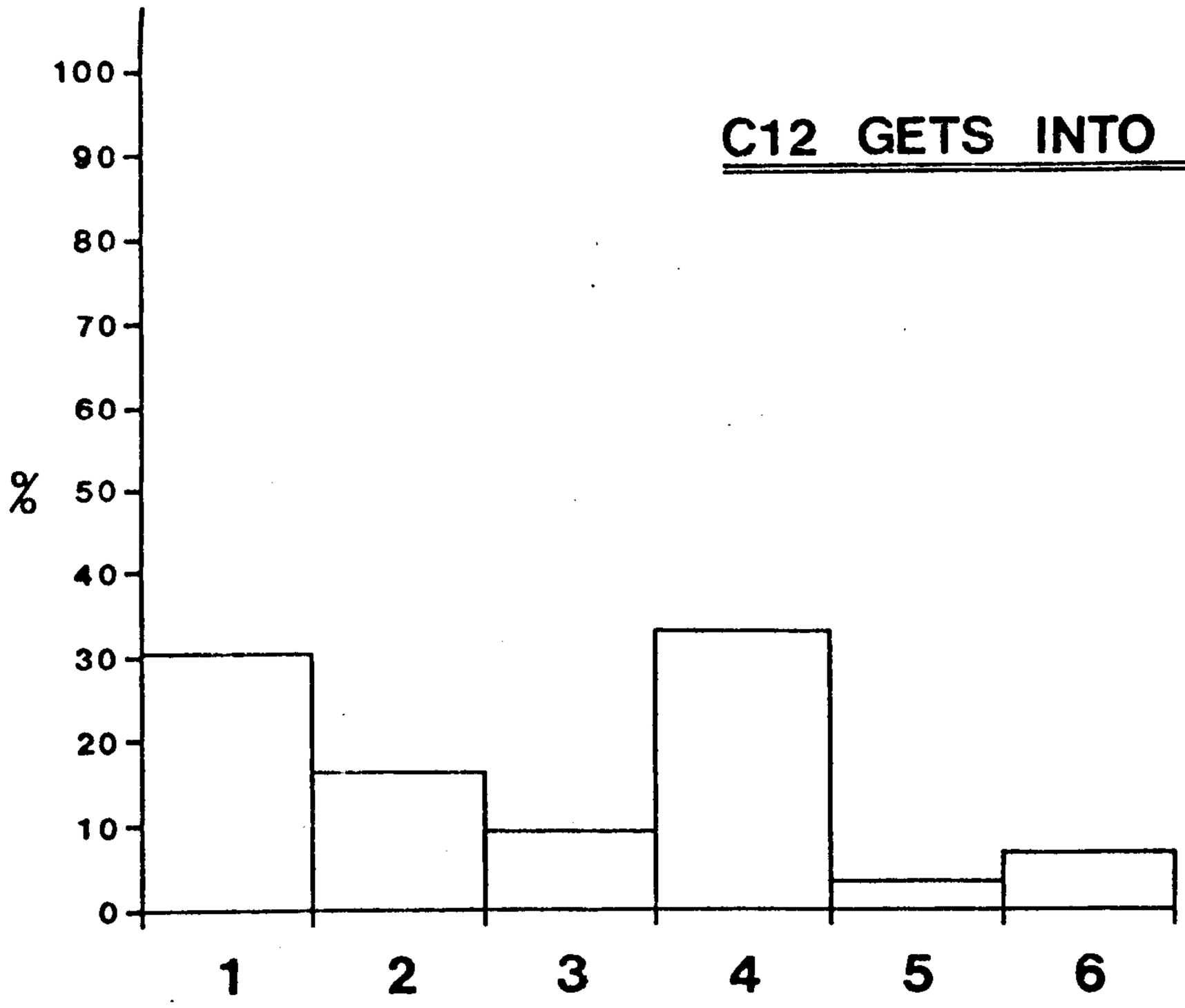
MALE MODELS

C11 SMOKES CIGARETTES

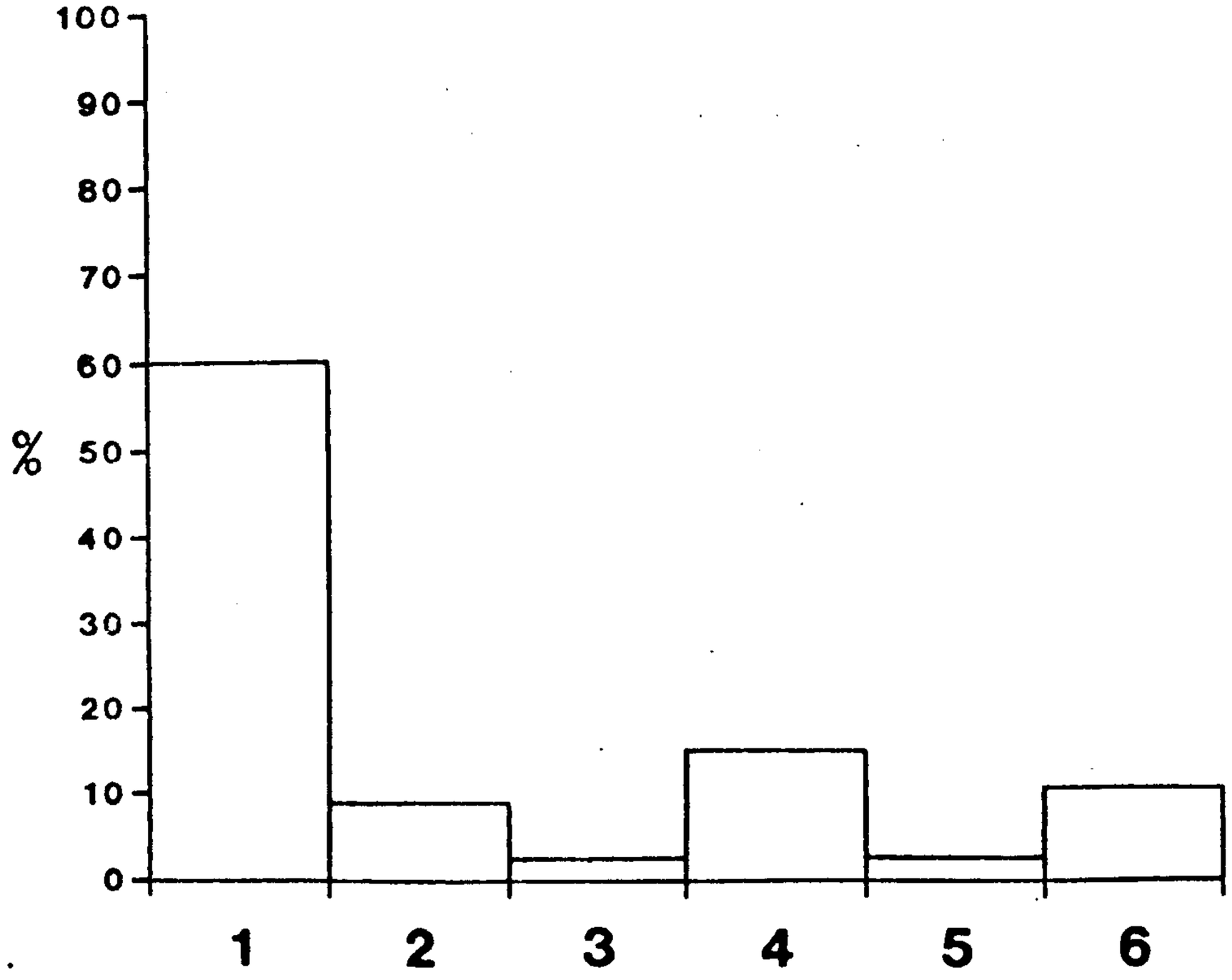




C12 GETS INTO TROUBLE

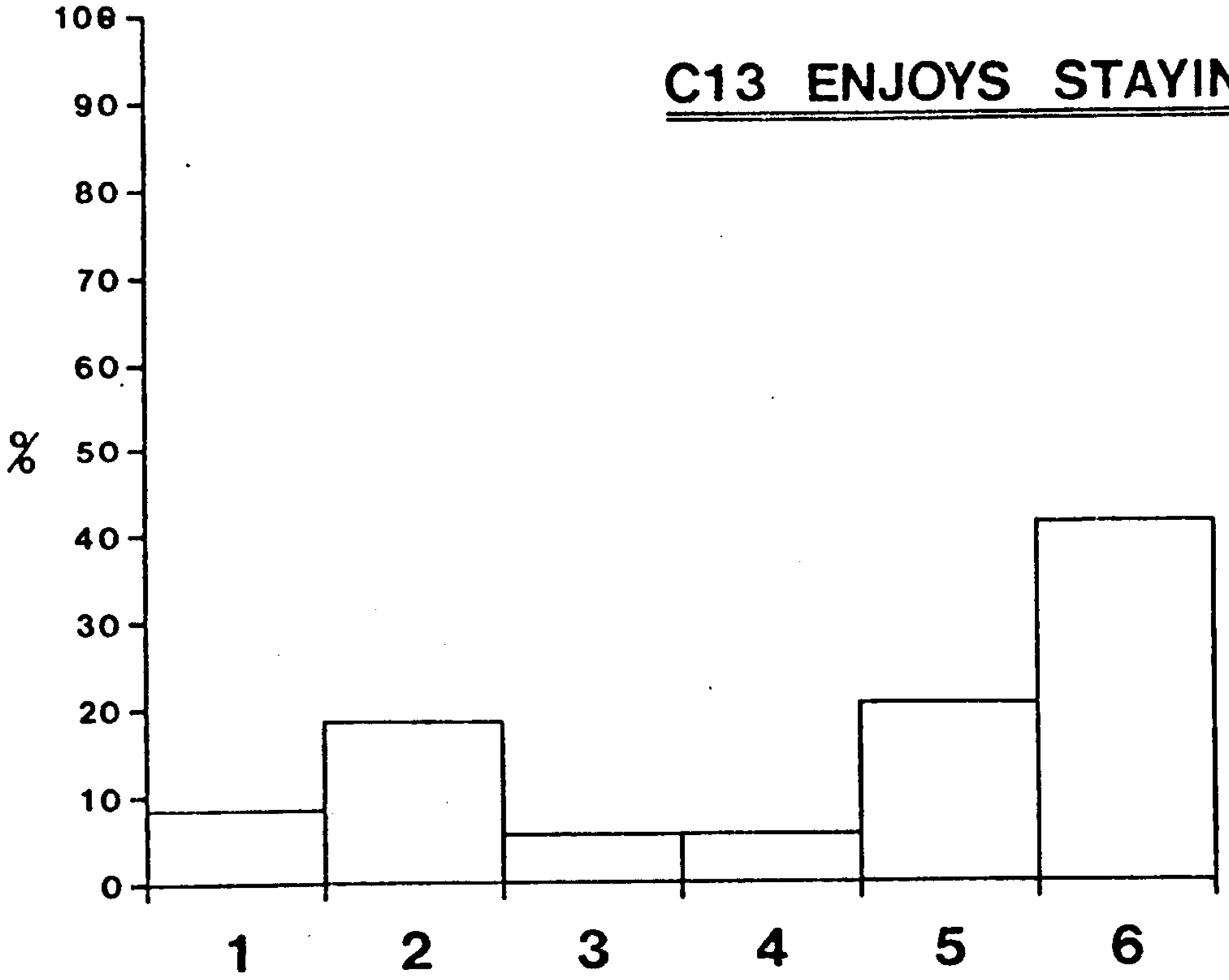


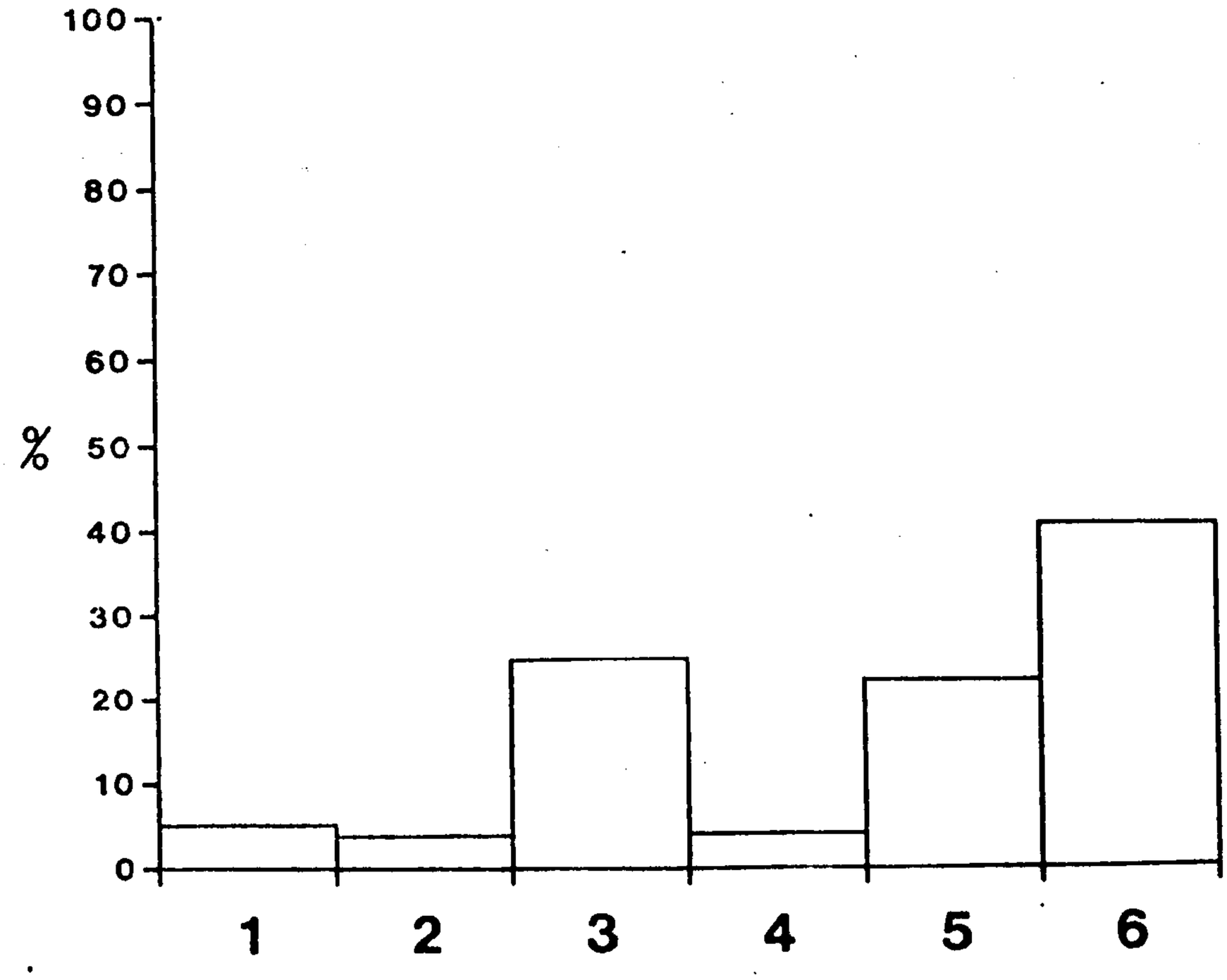
FEMALE MODELS



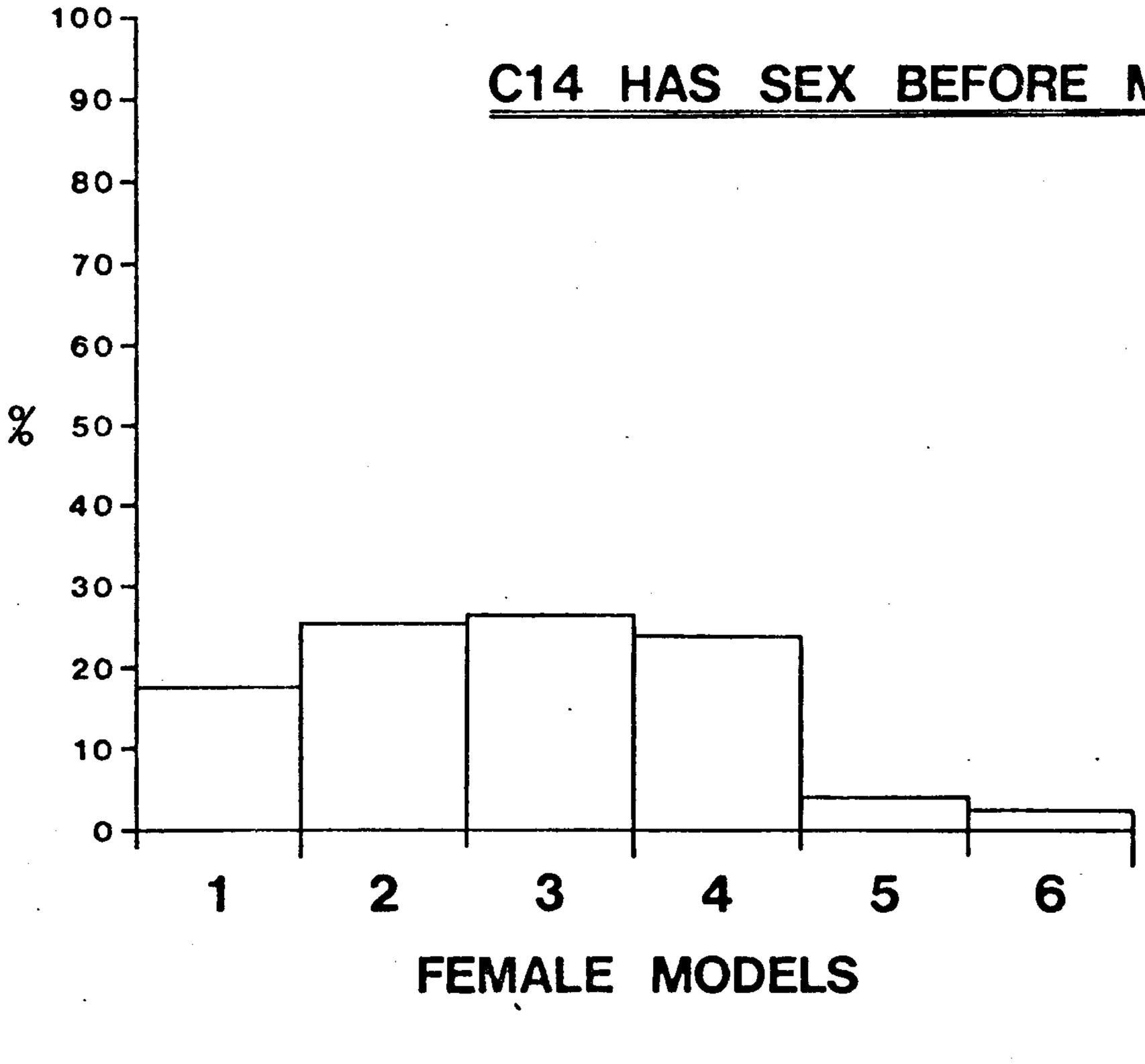
MALE MODELS

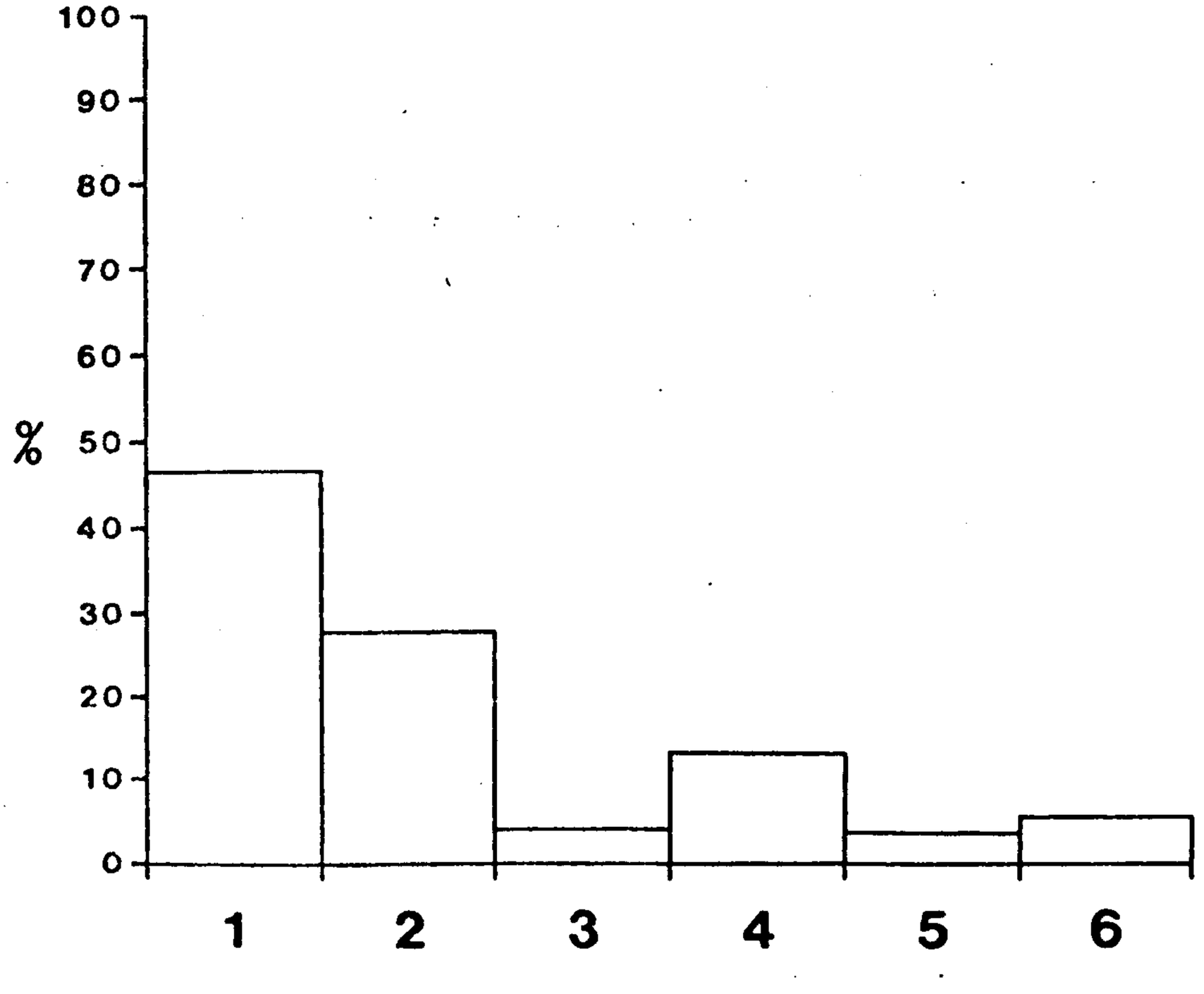
C13 ENJOYS STAYING HOME



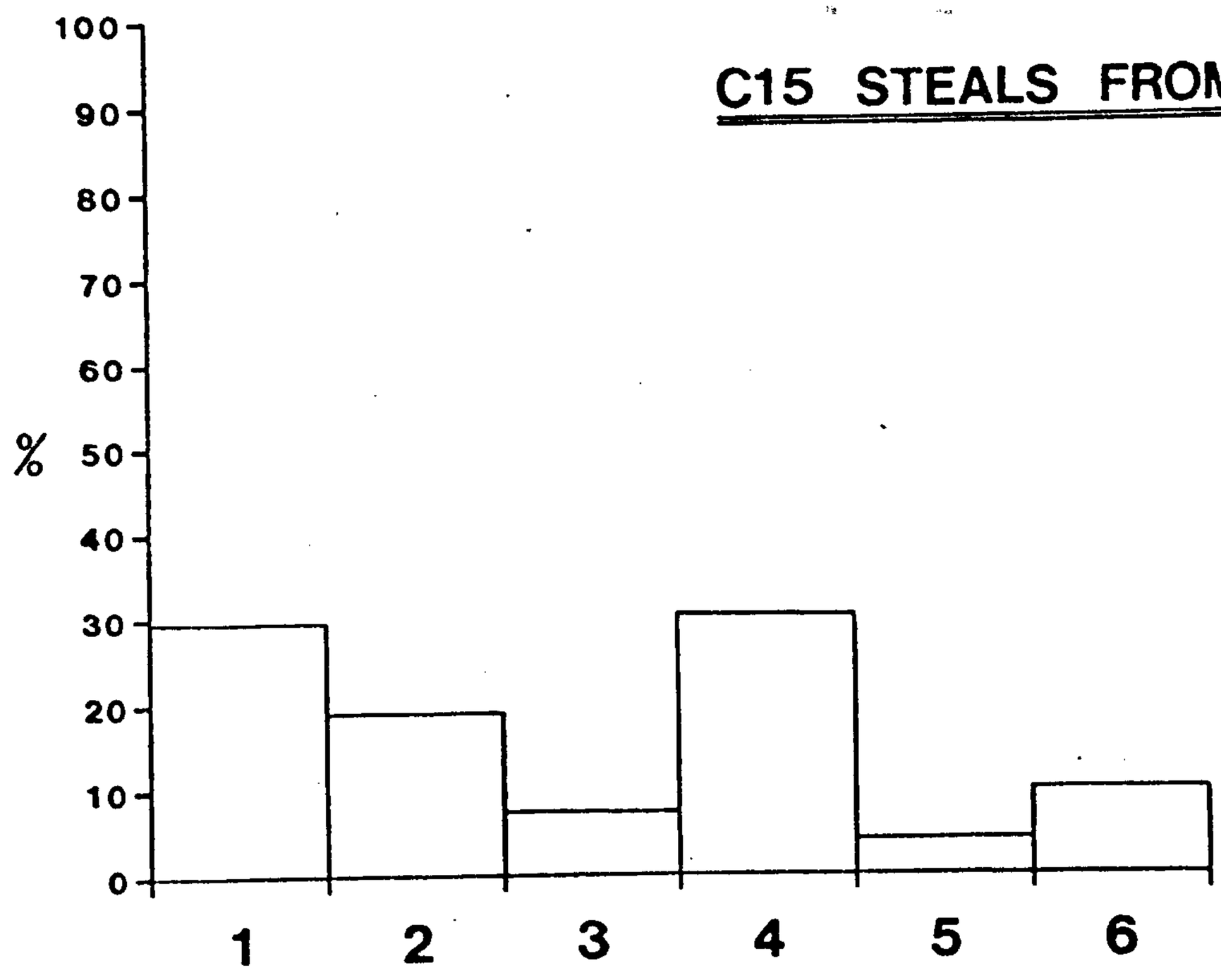


C14 HAS SEX BEFORE MARRIAGE

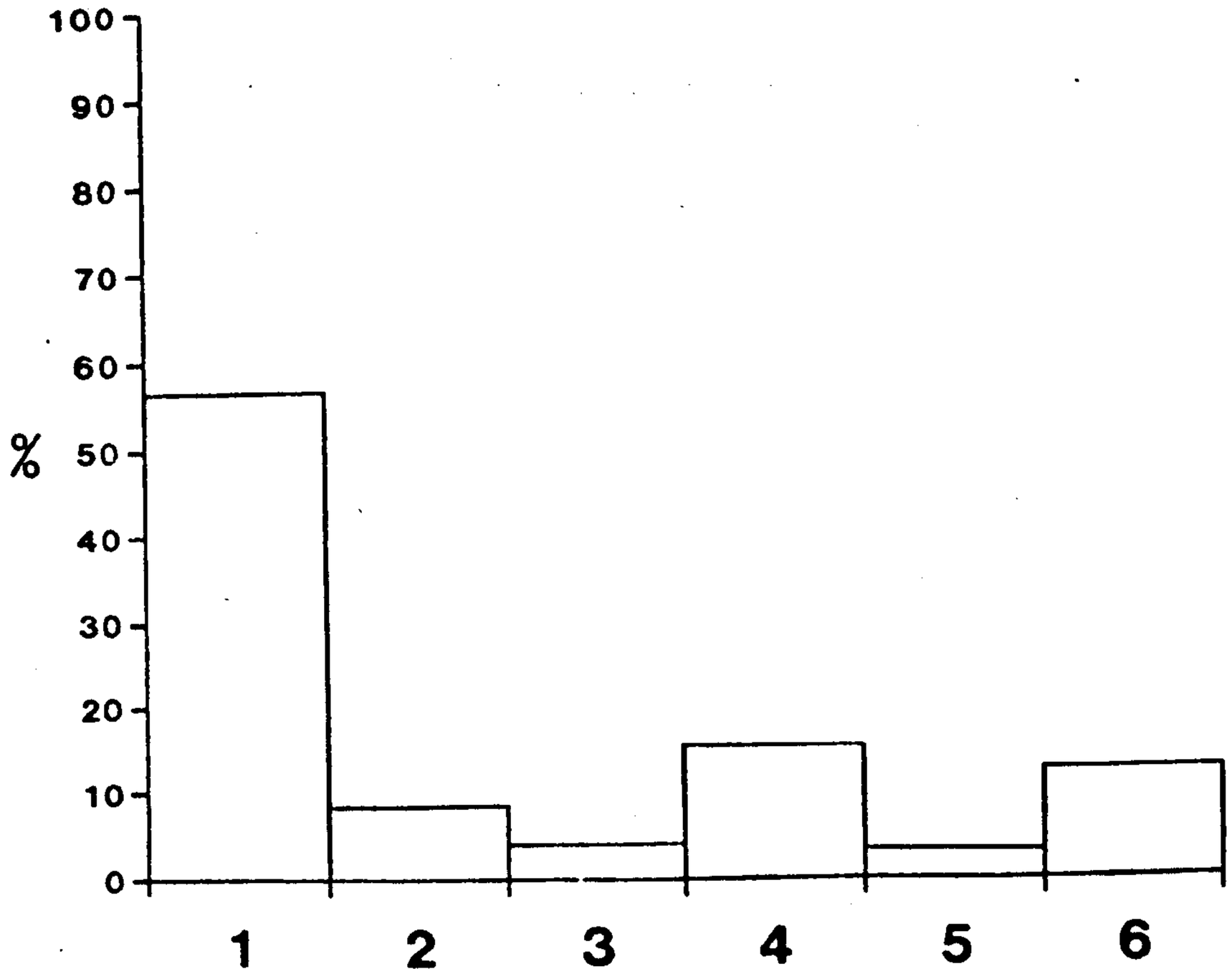




C15 STEALS FROM SHOPS

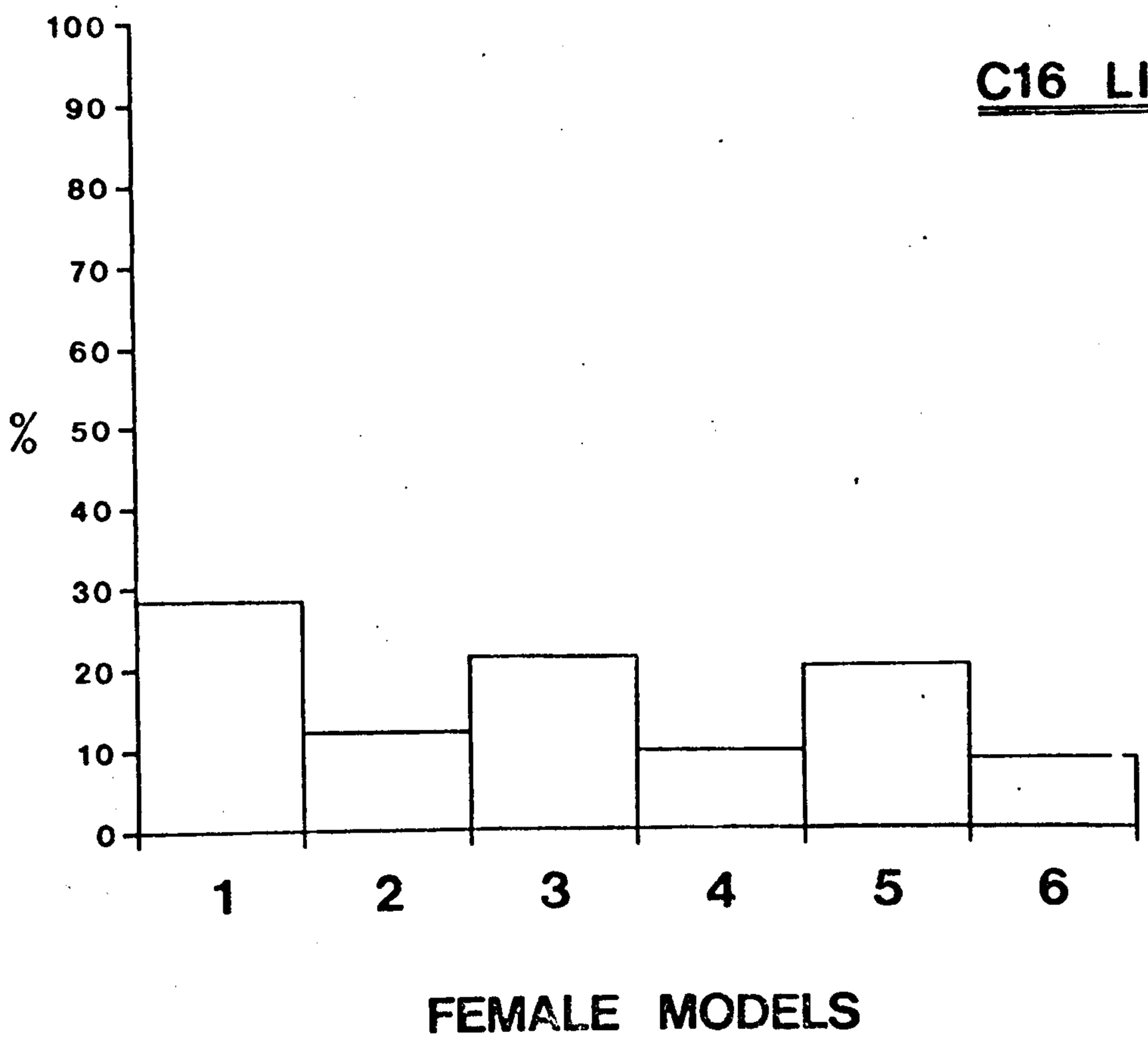


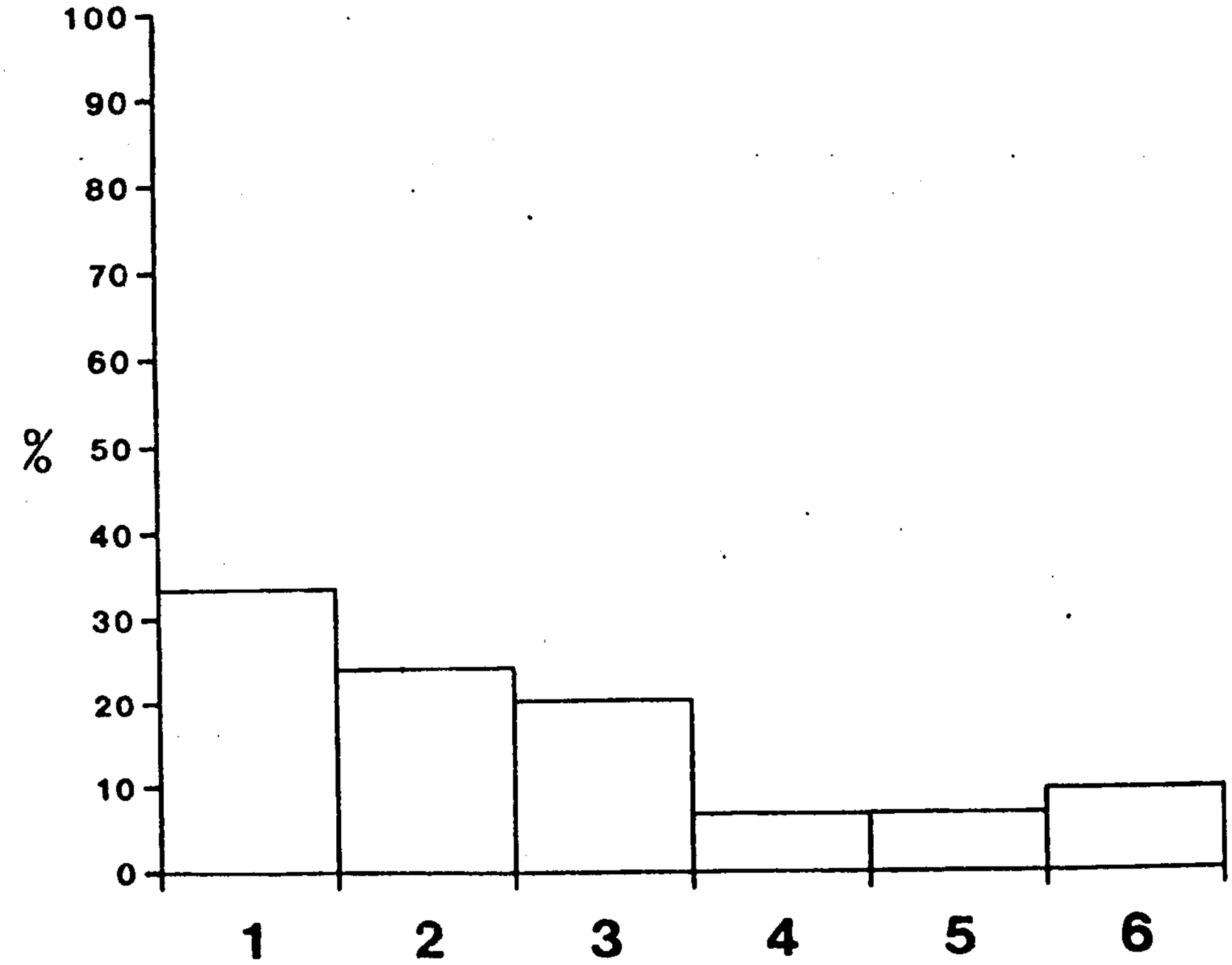
FEMALE MODELS



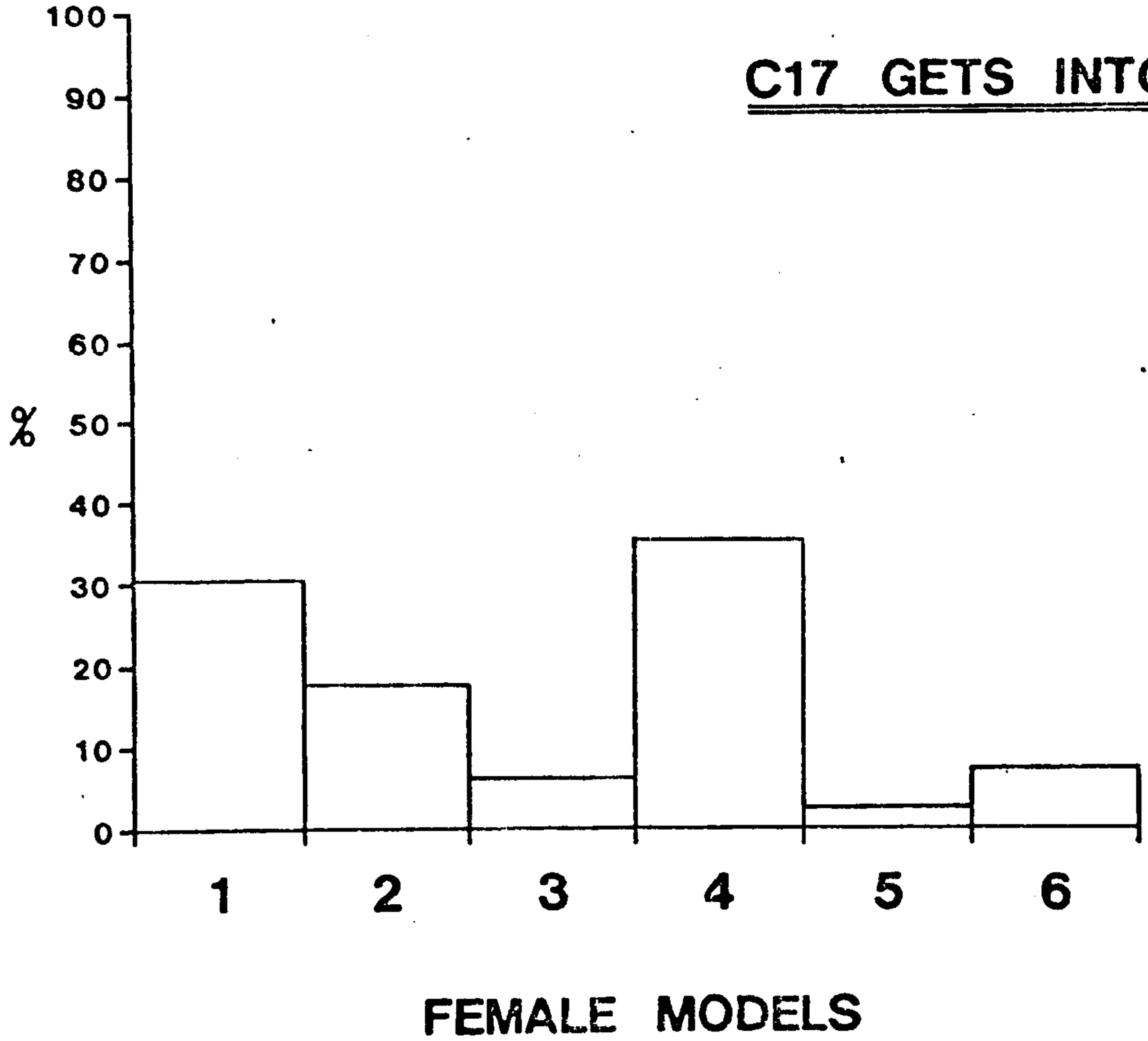
MALE MODELS

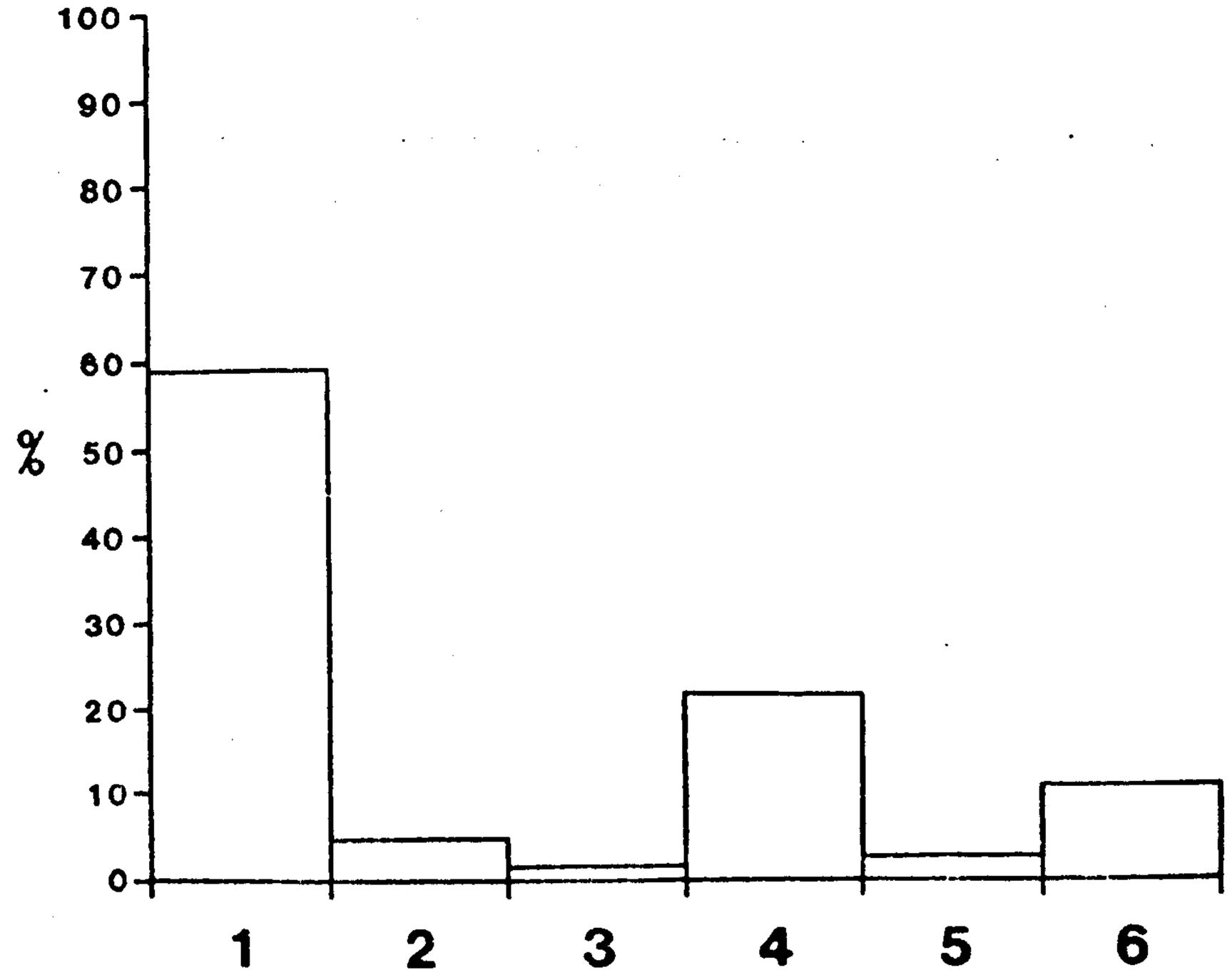
C16 LIKE I AM


100
90
80
70
60
%
50
40
30
20
10
0
1
2
3
4
5
6
FEMALE MODELS


100
90
80
70
60
%
50
40
30
20
10
0
1
2
3
4
5
6
MALE MODELS

C17 GETS INTO FIGHTS





trouble, C14) Has sex before marriage, and C16) Like I am. The histograms offer a visual presentation of the frequency of responses by all subjects for each concept on all twelve models.

The following descriptions of each model is based on the concepts that were attributed to them significant at the $P < .05$ level.

Female Models:

Model 1 gets into fights, steals, gets into trouble, takes risks, stays out late and is overall very troublesome.

Model 2 is promiscuous. She smokes, is older and is generally disliked by other girls.

Model 3 is good looking and has many friends. She likes kissing and going to parties and is generally liked by everyone.

Model 4 is generally troublesome. She is young, not clever, takes risks, steals from shops and gets into fights.

Model 5 is seen as being older, clever, cautious, not taking unncessary risks and is generally passive.

Model 6 is introverted and prefers to stay home. She does not have sex before marriage and she does not like kissing. She is also seen as being older with very few friends.

Male Models:

Model 1 fights, steals, takes risks and generally gets into trouble. He is seen as being young, and not clever. He engages in sex, likes kissing and smokes.

Model 2 is very socially oriented. He is good looking, likes going out and has many friends. He enjoys parties and likes kissing.

Model 3 is generally passive and academically inclined. He likes staying home and he avoids risks which include having sex before marriage or even smoking.

Model 4 does not have many admirable qualities. He is seen as being younger, not clever and not good looking. He comes home early and does not like parties. He is inclined toward fighting and is generally antisocial.

Model 5 is clever and is older. He stays away from trouble and does not take risks. He is also seen as having few friends.

Model 6 represents more of a father figure. He enjoys staying home, he is older and he is not especially good looking.

Tables 23 and 24 in the appendix show correlations between C16) Like I am and the other sixteen concepts for the extreme scorers on P, E, N and ASB for boys and girls. A summary of the findings are given in Table 4.1 below.

As P, E, N, L and ASB increase the following concepts significantly correlate either positively (+) or negatively (-) with 'Like I am' for boys and girls.

TABLE 4.1

	BOYS	GIRLS
+P	+ Takes risks + Gets into fights + Smokes cigarettes + Stays out late - Clever	+ Likes parties + Stays out late + Likes kissing + Takes risks +Has sex before marriage
+E	+ Takes risks - Has few friends	+ Stays out late + Good looking - Enjoys staying home
+N	(No sign. correlations for any concepts)	- Gets into trouble

	BOYS	GIRLS
+L	+ Has few friends	+ Has few friends
	- Takes risks	+ Enjoys staying home
		- Stays out late
		- Gets into fights
		- Young
+ASB	+ Likes kissing	+ Likes parties
	+ Takes risks	+ Stays out late
	+ Smokes cigarettes	+ Likes kissing
	+ Steals from shops	+ Smokes cigarettes
	+ Gets into fights	+ Has sex before marriage
		+ Gets into fights

The correlations in the appendix (Tables 23 and 24) show that all of the concepts related to personality correlate in the predicted direction, while only the concepts listed above showed significant differences between groups. From studying the tables, a $P < .001$ correlation is evident between 'Like I am' and 'Like I will be' across all groups. Also almost all groups revealed a significant correlation between 'Good looking' and 'Like I am'.

In an attempt to replicate Powell's finding (1977) that high P scorers stereotype less consistently than low P scorers, a log-linear analysis was employed as described by Everitt (1977, Chap. 5) to assess the relationship between personality and stereotyping. (Unfortunately a coefficient of concordance could not be used for the analysis as recommended by Stewart, Powell, and Tutton (1975), since the testing procedures were modified from Powell's original test. Unlike the present study, Powell had his subjects rank order each of the models for every concept.)

A log-linear analysis shares many similarities to an analysis of variance. As Everitt describes the statistical programme, "... the values taken by the 'main effect' parameters simply reflect differences between the row or the column marginal totals,..." 'Testing for independence is therefore seen to be equivalent to testing whether all the interaction terms are zero, or, in other words, that the model specified provides an adequate fit to the data." (p.83) 'If such a model provided an adequate fit to the data it would imply that differences between cell frequencies simply reflected differences between single variable marginal totals." (p.85) Thus the chi-squares below, in Table 4.2, relate to the 'concept main effect' model. As the chi-squares decrease the less the concept frequency distribution is affected by personality or by interactions between the personality factors. Conversely, very high chi-square values suggest that personality plays a significant part in the distribution of the ratings.

The following concepts in Table 4.2 were found <u>not</u> to show any significant relationship to personality (P, E and N).

TABLE 4.2

	CONCEPTS	MODELS	CHI-SQUARED	d.f.	SIGN.	
C1	Likes parties	M	41.07	35	.222	n.s.
C1	Likes parties	F	25.73	35	.5	n.s.
C2	Stays out late	M	35.00	35	.468	n.s.
C2	Stays out late	F	37.61	35	.350	n.s.
C3	Clever	M	32.11	35	.5	n.s.
C3	Clever	F	31.63	35	.5	n.s.
C4	Young	F	28.80	35	.5	n.s.
C6	Old	M	43.86	35	.145	n.s.
C6	Old	F	34.87	35	.474	n.s.
C7	Has few friends	M	27.05	35	.5	n.s.
C7	Has few friends	F	39.75	35	.266	n.s.
C9	Likes kissing	M	31.29	35	.5	n.s.

cont'd.

TABLE 4.2 cont'd.

	CONCEPTS	MODELS	CHI-SQUARED	d.f.	SIGN.	
C9	Likes kissing	F	45.68	35	.107	n.s.
C10	Takes risks	M	34.73	35	.481	n.s.
C10	Takes risks	F	42.45	35	.181	n.s.
C11	Smokes cigarettes	M	45.45	35	.111	n.s.
C11	Smokes cigarettes	F	30.90	35	.5	n.s.
C12	Gets into trouble	M	33.19	35	.5	n.s.
C13	Enjoys staying home	M	23.15	35	.5	n.s.
C13	Enjoys staying home	F	38.79	35	.302	n.s.
C14	Sex before marriage	M	33.12	35	.5	n.s.
C14	Sex before marriage	F	43.23	35	.160	n.s.
C15	Steals from shops	F	40.25	35	.121	n.s.
C16	Like I am	M	39.24	35	.285	n.s.
C17	Gets into fights	M	37.88	35	.339	n.s.

Only nine out of the possible thirty four concept combinations showed significance at the $P < .05$ level in relating personality with stereotyping. The concepts in which personality did affect stereotyping for the female models, as shown in Table 4.3, were; C5) Good looking, C8) Like I will be, C12) Gets into trouble, C16) Like I am, and C17) Gets into fights. Likewise for the male models personality differences were noted for C4) Young, C5) Good looking, C8) Like I will be, and C15) Steals from shops. Table 4.3 presents the personality factors which significantly affected stereotyping behaviour.

To further understand Table 4.3 the nine concepts are presented individually in Table 4.4 illustrating which specific personality groups tended to choose which models. In the first instance for concept C4) Young - male models, the -P group

TABLE 4.3

PERSONALITY VARIABLES SIGNIFICANTLY AFFECTING STEREOTYPING BEHAVIOUR

			'MAIN EFFECT'		MAIN EFFECT + P		MAIN EFFECT +E		MAIN EFFECT +N	
	CONCEPTS	MODELS	CHI-SQUARED	SIGN.	CHI-SQUARED	SIGN.	CHI-SQUARED	SIGN.	CHI-SQUARED	SIGN.
C4	Young	M	51.04	.039	18.56	.345	45.34	.036	39.21	.121
C5	Good looking	M	49.39	.054	40.19	.101	47.82	.020	36.19	.202
C5	Good looking	F	54.73	.018	42.39	.066	50.32	.011	35.24	.234
C8	Like I will be	M	49.20	.056	42.52	.064	33.57	.298	43.29	.055
C8	Like I will be	F	54.44	.019	35.05	.241	32.28	.354	51.67	.008
C12	Gets into trouble	F	54.63	.018	40.43	.097	46.99	.025	45.85	.032
C15	Steals from shops	M	51.63	.034	46.48	.028	48.03	.020	38.54	.137
C16	Like I am	F	64.41	.002	52.00	.008	43.15	.057	58.75	.002
C17	Gets into fights	F	53.29	.024	38.84	.130	42.63	.063	47.06	.024

TABLE 4.4

CONCEPT	MODELS	SIGN. PREFERENCE
C4 Young	Male	-P tended to choose Model 5 +N tended to choose Model 1
C5 Good Looking	Male	+N tended to choose Model 1
C5 Good Looking	Female	-N tended to choose Model 2 +N tended to choose Model 5 +P tended to choose Model 2
C8 Like I will be	Male	+E tended to choose Model 2 -P tended to choose Model 5
C8 Like I will be	Female	+E tended to choose Model 3 -E tended to choose Model 5 +P tended to choose Model 2 -P tended to choose Model 5
C12 Gets into trouble	Female	+P tended to choose Model 5
C15 Steals from shops	Male	+N tended to choose Model 4
C16 Like I am	Female	+E tended to choose Model 3 -E tended to choose Model 6
C17 Gets into fights	Female	+P tended to choose Model 3 -P tended to choose Model 4

chose Model 1 significantly more often than the +P group. Likewise, the +N group tended to choose Model 5 significantly more often than the -N group as best representing the concept 'Young'.

Taking the total subject response to all of the models as the norm reflecting the model descriptions given on pages 60 and 61, when differences in P were noted, the +P group tended to match concepts and models which were not in agreement with the norm. In C12) Gets into trouble - female models, for instance, the high P group tended to choose Model 5 which, according to the norm, was chosen for staying away from trouble and not taking risks. This finding, however, is significantly notable in only six of the possible 34 concept combinations. Thus, although there is evidence for a trend which might suggest that +P scorers tend to show odd and unusual perceptions compared with the other groups, this finding is only supported in a small minority of the cases.

A Varimax rotated factor analysis was run on all of the stereotyping concepts which is summarized on Table 19 in the appendix. For the male models six factors emerged. The first factor could be described as "anti-social behaviour" loading high on C10) Takes risks, C11) Smokes cigarettes, C12) Gets into trouble, C15) Steals from shops, and C17) Gets into fights. The second factor reflected "self concept"; C8) Like I will be, and C16) Like I am. Two concepts loaded highly on factor 3 which could be described as "sexual misbehaviour": C9) Likes kissing and C14) Has sex before marriage. The next three factors showed high loadings on only one concept each. Factor 4 loaded highly on C6) Old, factor 5 loaded high on C2) Stays out late and factor 6 loaded high on only C1) Likes parties.

For the female models five factors emerged. The first three factors could be labelled the same as for the male models. Factor 1 reflects anti-social behaviour; factor 2 represents self concept; and factor 3 loaded highly on the sexual items. Factor 4, however, showed high loadings on C7) Has few

friends and C13) Enjoys staying home. This factor could be labelled "introverted behaviour". The fifth and final factor loaded positively on C4) Young and negatively on C6) Old. From the factor analysis of the Stereotyping Test it might be inferred that many of the seventeen concepts are independent of each other.

4.2 SUMMARY OF STEREOTYPING RESULTS

It can be stated from the results presented in this chapter that girls stereotype more consistently than boys and that male models are stereotyped more strongly than female models, as predicted from past research. Concept 16, expressing the self concept of 'Like I am', served as an accurate reflection of the personality factors with all of the concepts correlating in the predicted direction with personality. Interestingly, sex differences were observed which showed girls who were high on P and ASB to commit predominantly sexual offences, while the antisocial, high P boys showed aggressive behaviours. Powell's (1977) finding that high scorers on P stereotype less consistently than low P scorers was not satisfactorily replicated. Few significant differences were noted between any of the extreme personality groups on consistency of stereotyping behaviour. Finally, a factor analysis of the Stereotyping Test showed independence between the seventeen concepts.

CHAPTER 5

5.1 RESULTS: ANALYSIS OF THE RISK PERCEPTION TEST

The Risk Perception Test format is given in the appendix (p.155). The six cartoons, which were presented in slide form, are shown on the following pages. Each subject was instructed to examine each slide carefully and to answer the four questions for each slide: 1) Will the person breaking the law get caught? 2) Is the person breaking the law just for the fun of it? 3) Did the person breaking the law think about doing it long beforehand? and 4) Would you ever break the law in this way? The subject checked either 'definitely', 'possibly', '50/50 chance', 'possibly not' or 'definitely not' for each question.

Tables showing the means and standard deviations for risk (R), thrill seeking (ThS), premeditation (Pre) and criminality (C) by school and sex are listed in the appendix (Tables 25 to 48).

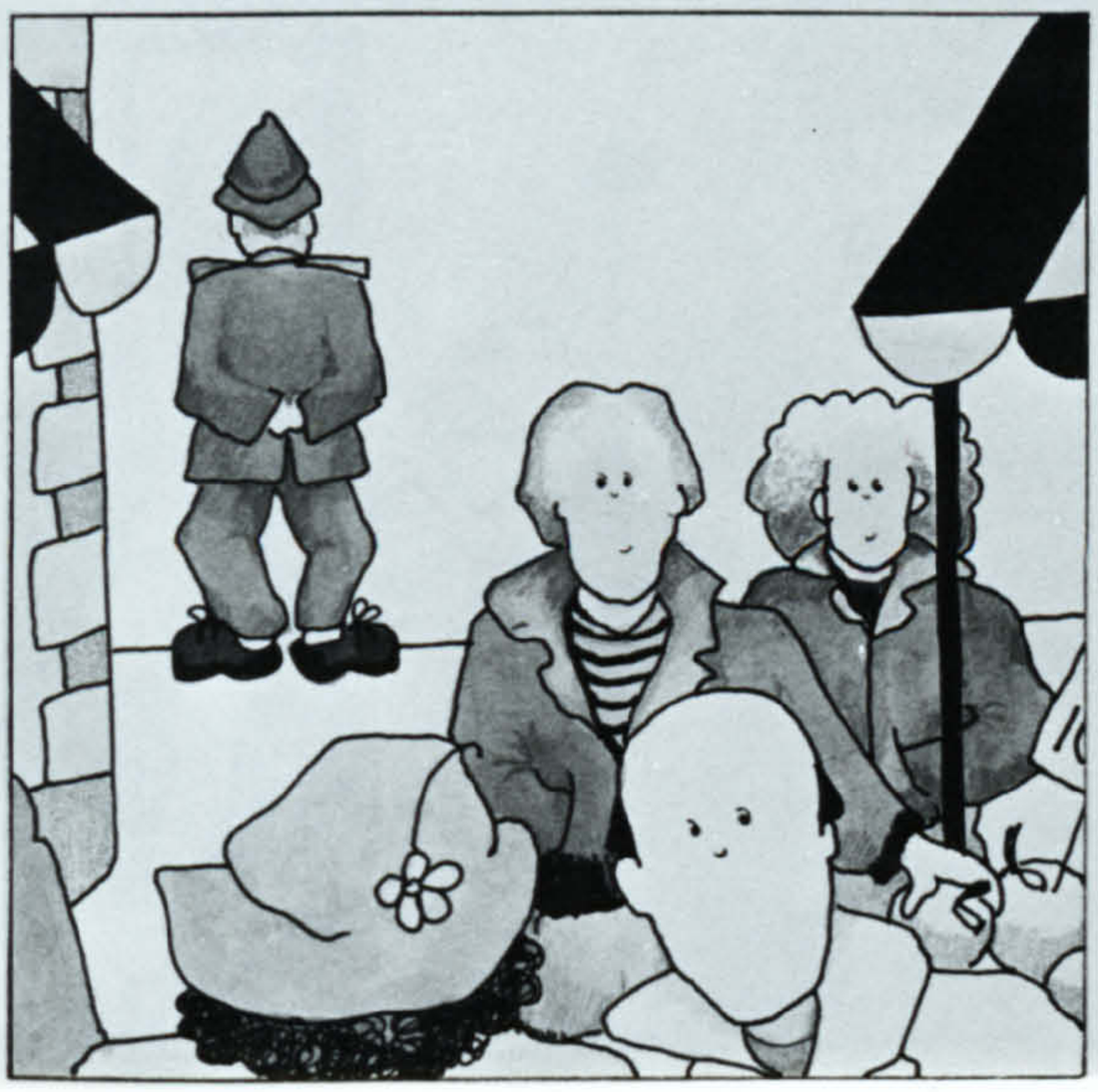
Looking first at the risk items for each of the six slides (labelled R1, R2, R3, R4, R5, R6), the following table shows the means and standard deviations for boys and girls:

TABLE 5.1

	BOYS		GIRLS		P differences
Variable	Mean	S.D.	Mean	S.D.	between means
R1	2.68	1.04	2.47	1.04	$<.001$
R2	3.92	.85	4.01	.79	
R3	3.50	.86	3.68	.80	$<.001$
R4	4.11	.85	4.25	.79	$<.01$
R5	4.16	.91	4.35	.83	$<.001$
R6	3.91	.83	3.96	.78	

Risk perception was determined based on the responses to the question, "Will the person breaking the law get caught?" Notable differences in responses are evident between the boys and the girls. In the first slide depicting someone

Slide No. 1



Slide No. 2

Slide No. 3

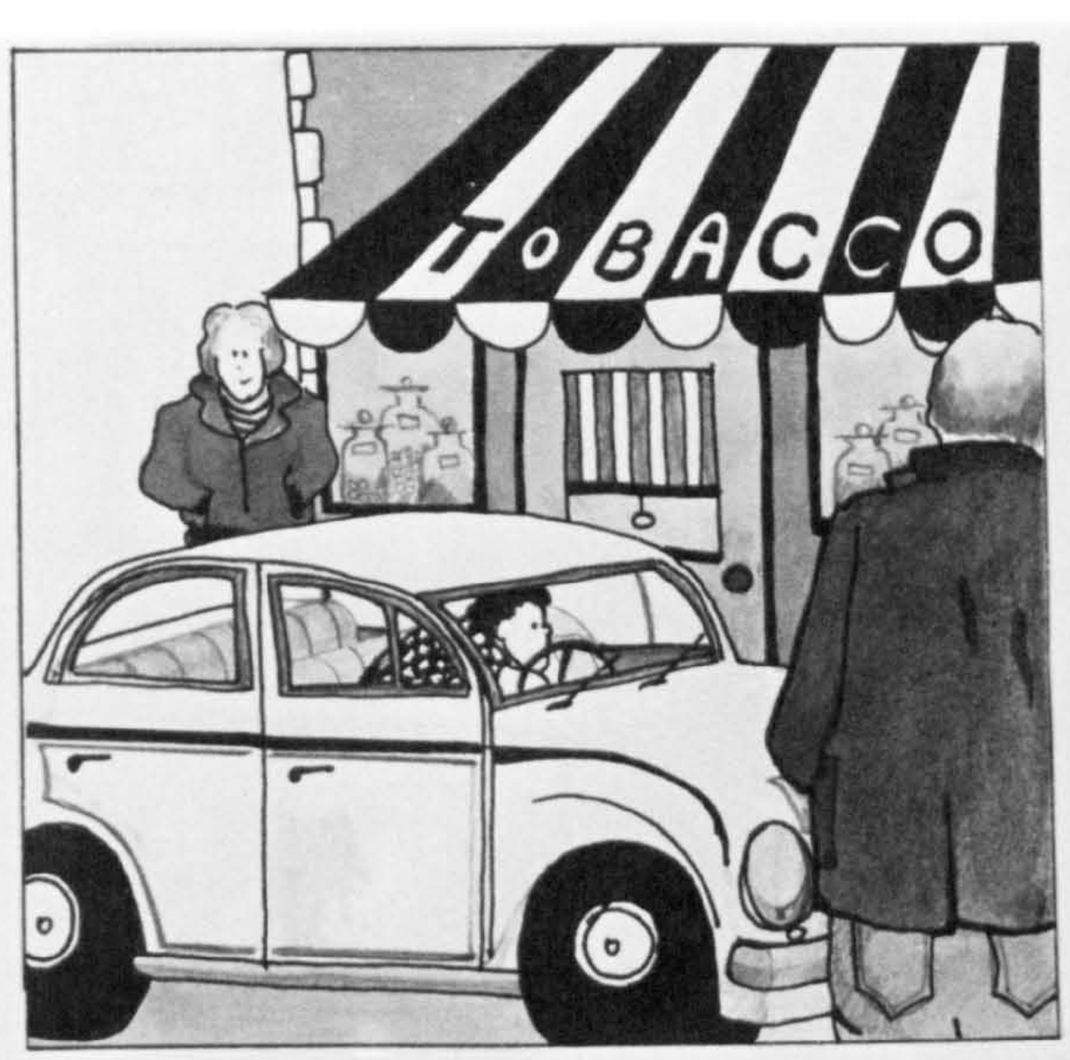

SUPERMARKET
10¢ OFF PEAS

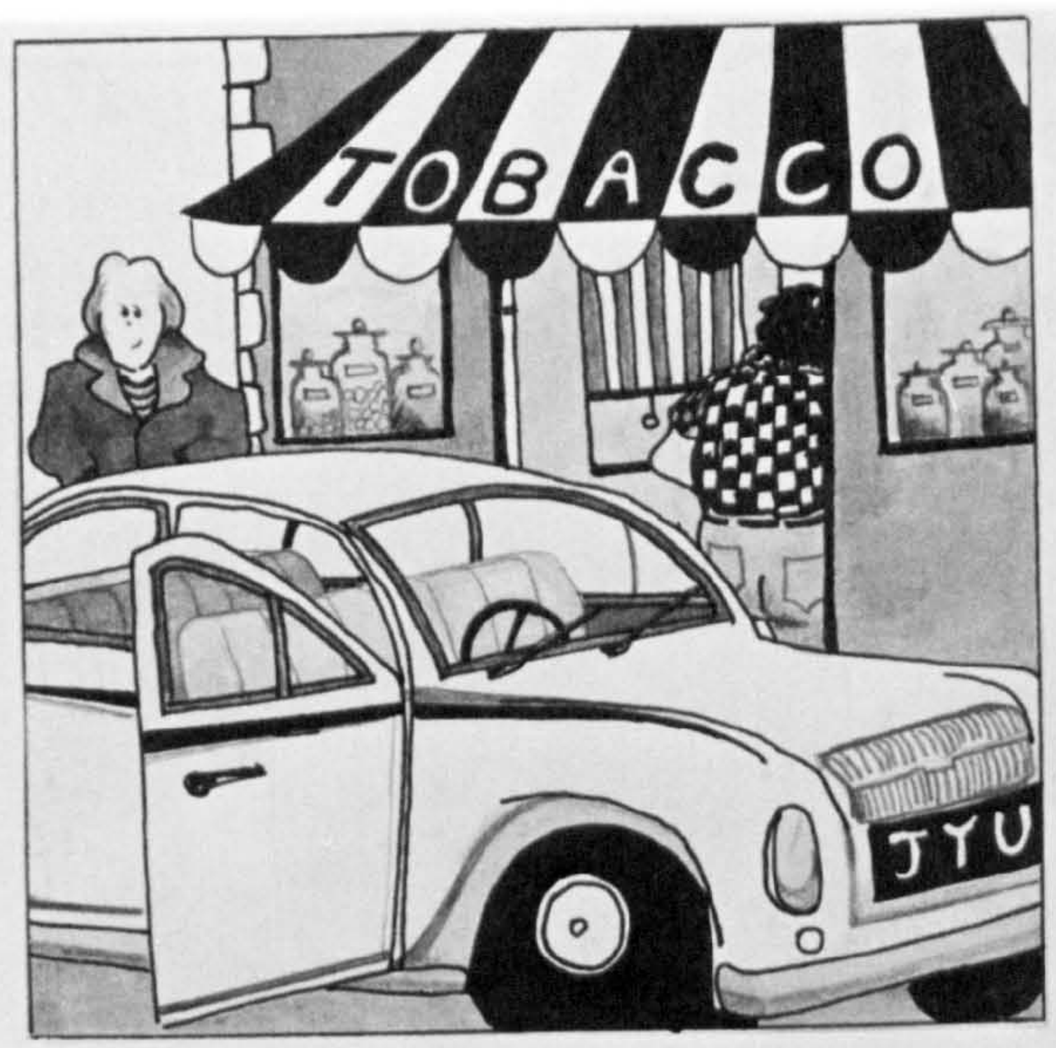

STORE DETECTIVES OPERATE HERE
NEW!
ICE CREAM

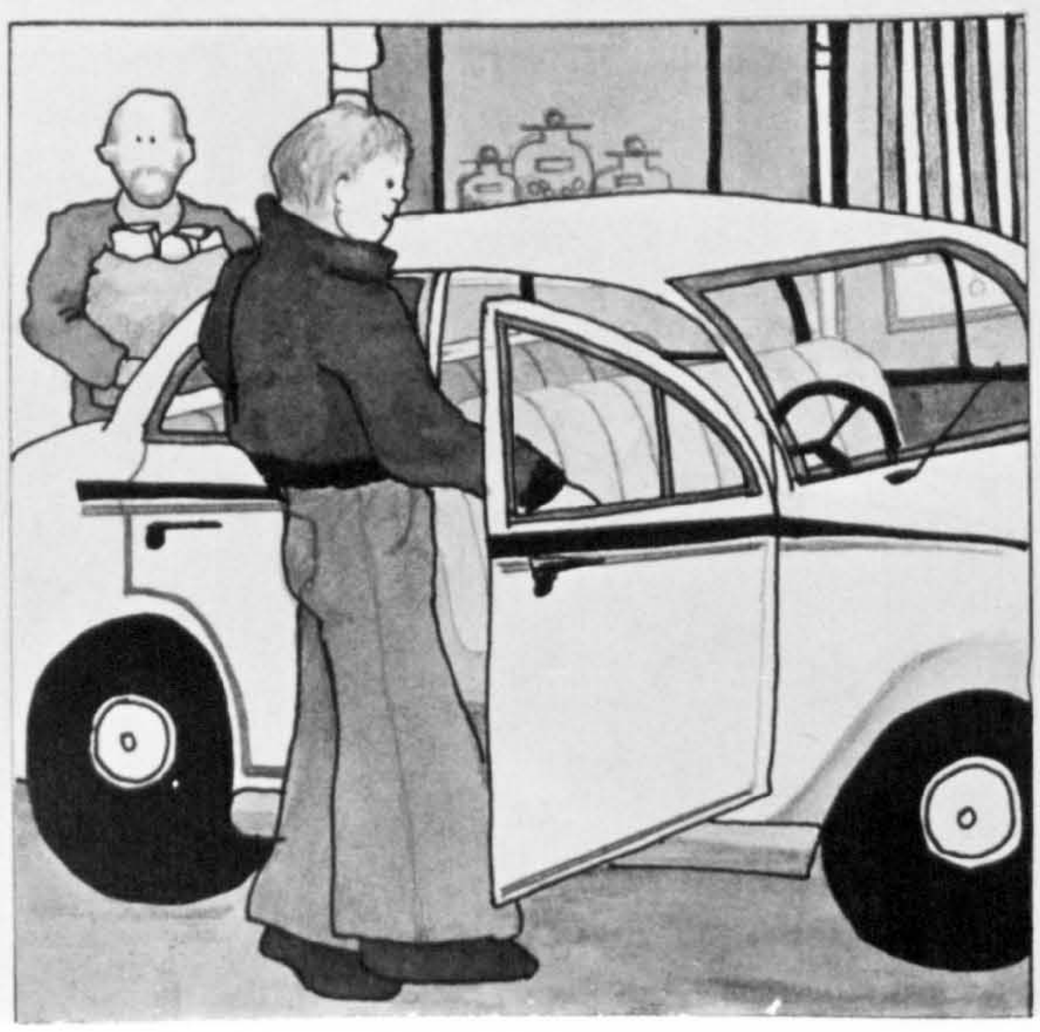

STORE DETECTIVES OPERATE HERE
NEW!

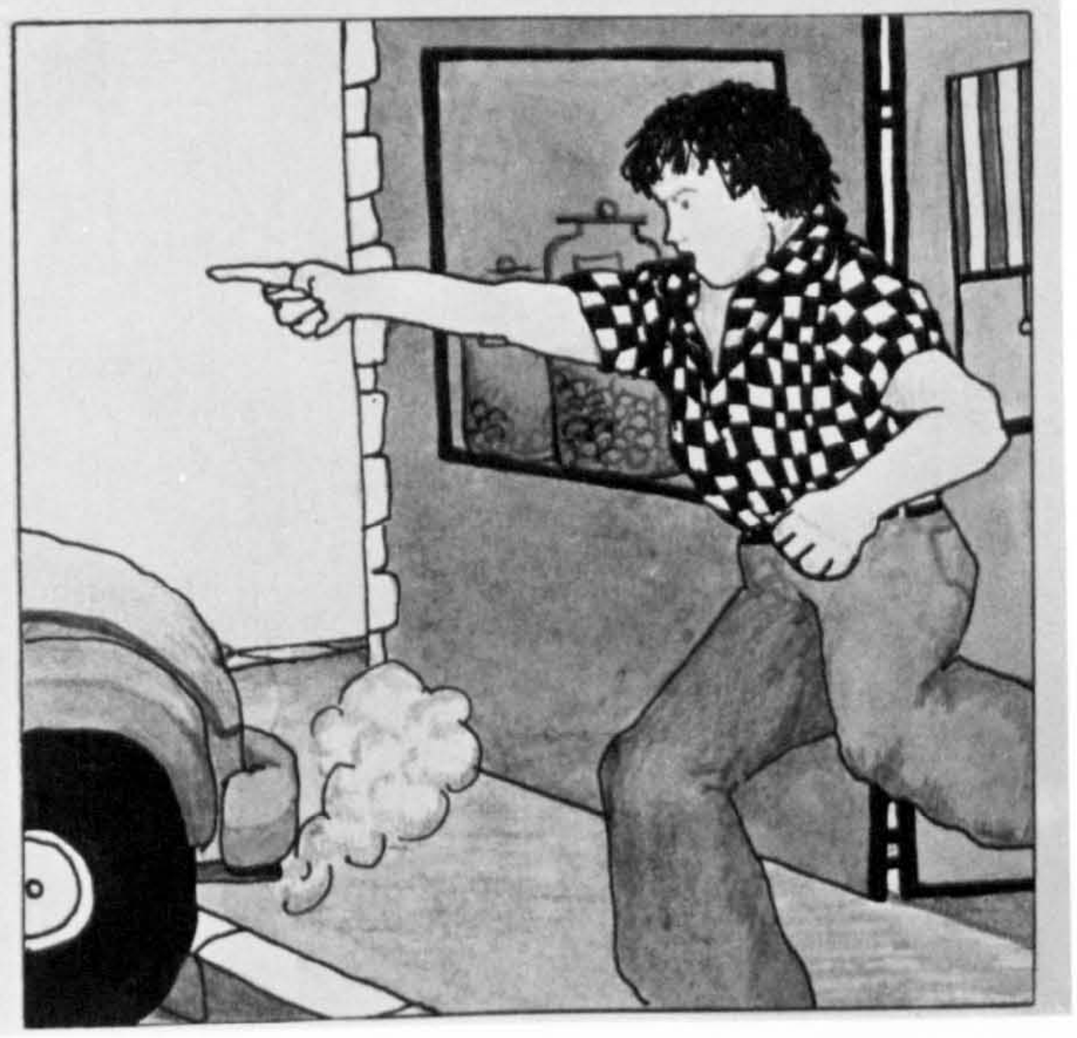

RATE HERE
ICE CREAM
ICE
ICE

Slide No. 4

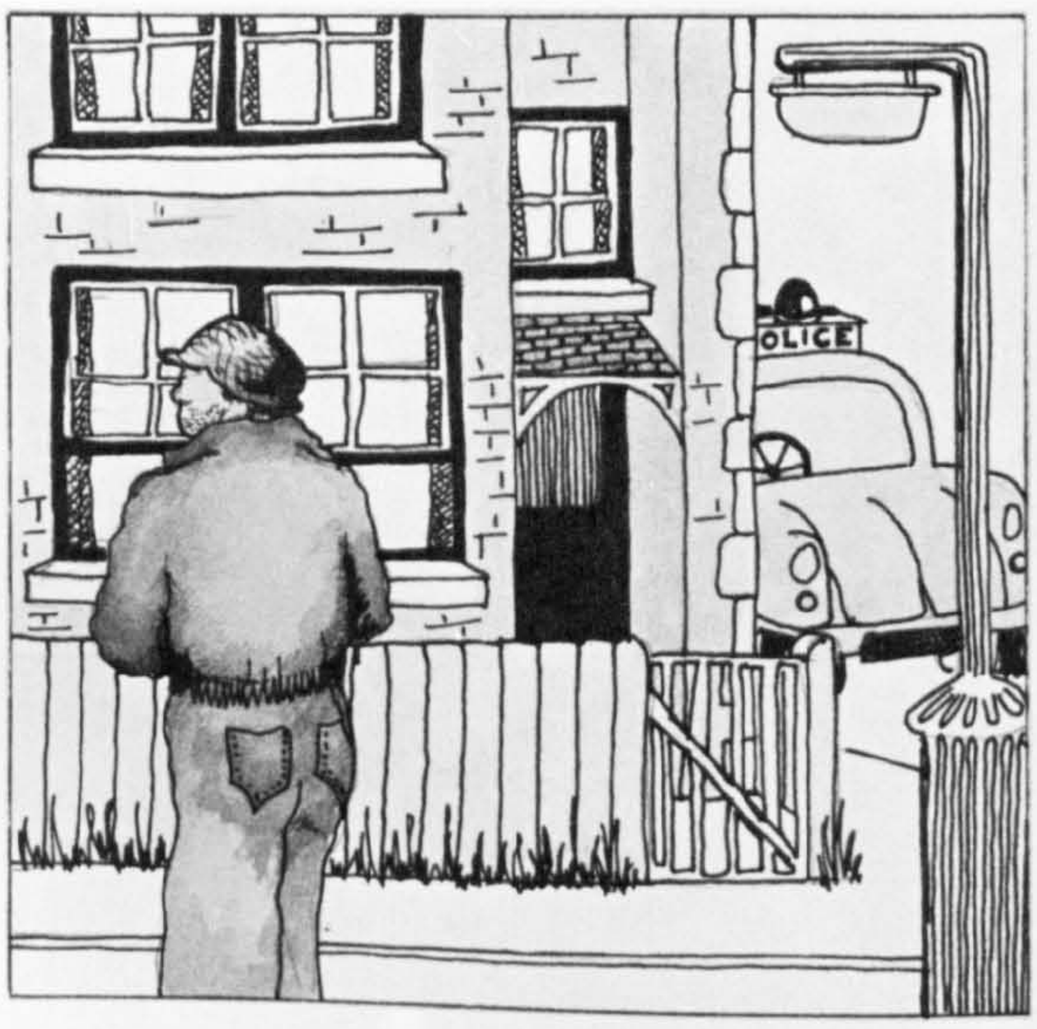


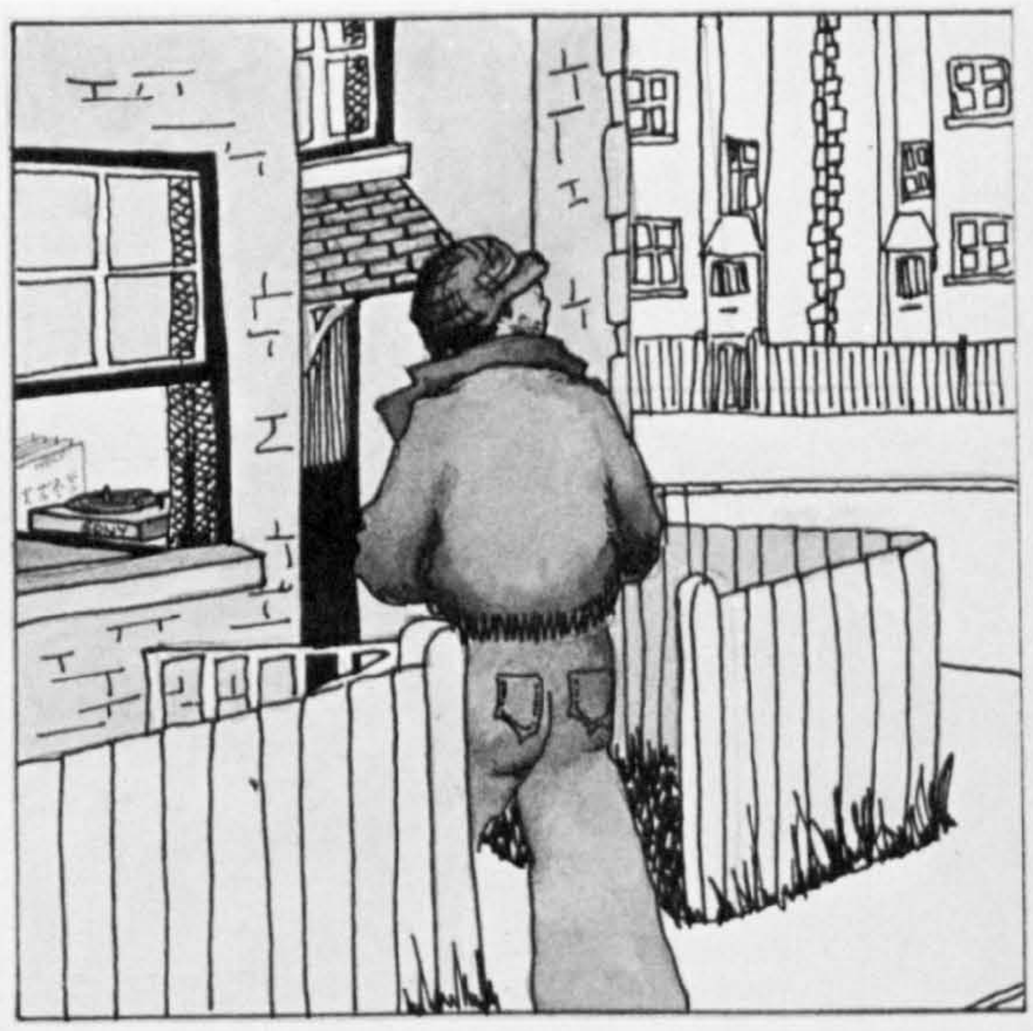


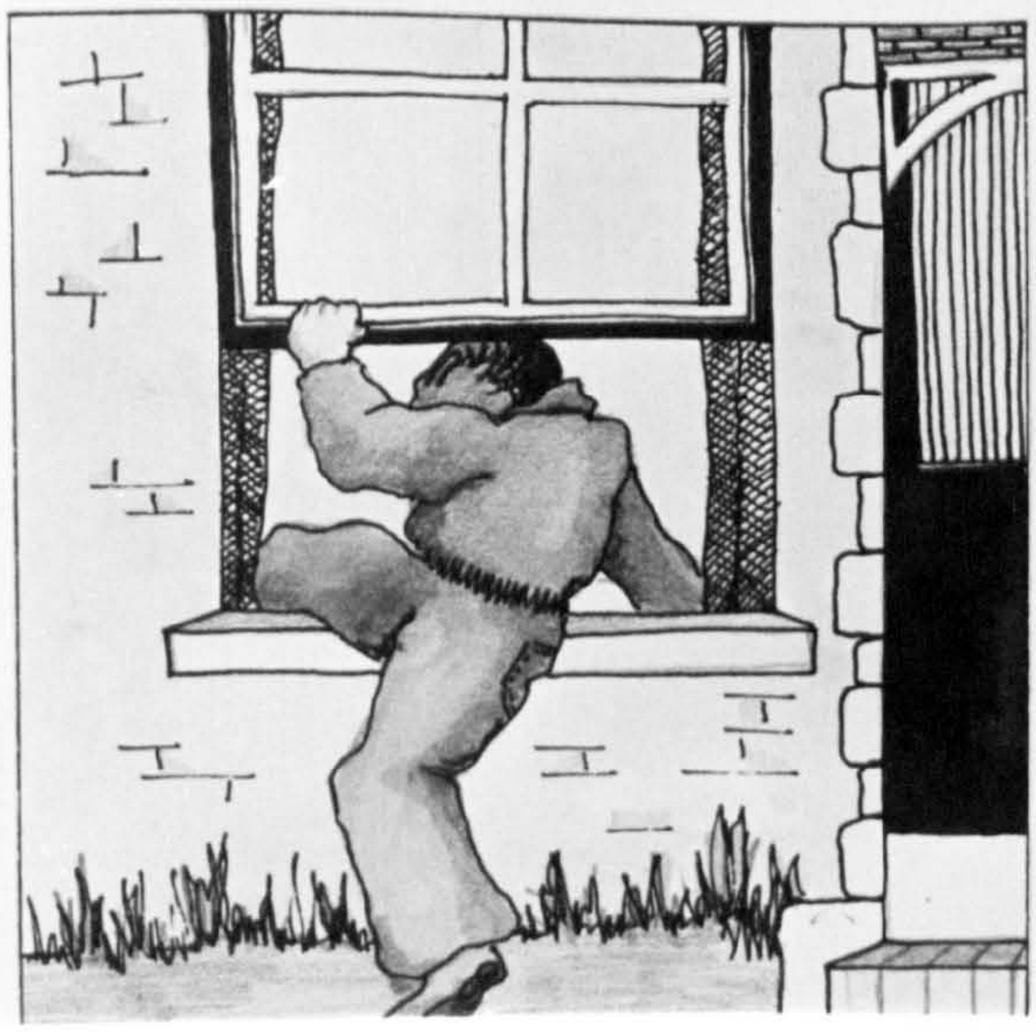




Slide No. 5







Slide No. 6

stealing an apple from a fruit stand, the School 1 girls perceived less risk than the boys, as seen in Appendix Table 25. Most subjects, however, rated the risk of capture in slide 1 as just 'possible'. On each of the other five slides the boys perceived less risk than the girls. This is particularly significant in the situations of stealing from a shop (slide 3), stealing a car (slide 4) and breaking into a house to steal valuables (slide 5). On five of the six slides the majority of the subjects felt that there was a better than even chance that the persons breaking the law would be apprehended. In the fifth slide, depicting someone breaking into a house to steal valuables, the majority of the subjects felt that the criminal would be caught. For slides 2 through 6, most of the subjects felt that there was a better than even chance that the persons committing the crimes would get caught.

On each of the six slides the subjects were asked the question; 'Is the person breaking the law just for the fun of it?", in which they again rated their perceptions on a five point scale from definitely to definitely not. This item attempts to identify the perception of thrill seeking behaviour (ThS).

TABLE 5.2

Variable	BOYS		GIRLS		P differences between means
	Mean	S.D.	Mean	S.D.	
ThS1	3.75	1.14	3.91	1.01	$< .01$
ThS2	2.19	1.22	2.50	1.19	$< .001$
ThS3	2.25	1.15	2.26	1.03	
ThS4	2.97	1.40	3.07	1.25	
ThS5	2.22	1.28	2.37	1.20	
ThS6	1.55	1.07	1.72	1.09	$< .01$

As shown in Table 5.2, as the crime increases in severity the ratings of perceived thrill seeking decreases. In the case of stealing an apple (slide 1) most of the subjects felt that the person committing the act is possibly doing it for the fun of it. The opposite is true for the last slide illustrating two people

robbing a post office, as might be predicted.

Overall boys perceive less thrill seeking than girls. This was especially significant for the slide showing a person snatching a woman's handbag. Compared with the risk question, there is a greater variance in the thrill seeking responses for all of the subjects. As shown in Tables 31 to 36 in the appendix, significant differences are evident in perception ratings between areas. This was especially true for the slides showing someone stealing from a shop (ThS3), someone stealing a car (ThS4), and persons robbing a post office (ThS6). A consistent trend, however, is not evident.

The third question; 'Did the person breaking the law think about doing it long beforehand?", was incorporated in an attempt to measure premeditation/ impulsivity (Pre). Thus each subject was to rate his or her perception of the extent to which the person breaking the law preconceived the act before committing it.

TABLE 5.3

	BOYS		GIRLS		P differences
Variable	Mean	S.D.	Mean	S.D.	between means
Pre1	2.40	1.33	2.36	1.24	
Pre2	3.48	1.27	3.20	1.21	$<.001$
Pre3	3.60	1.13	3.68	1.03	
Pre4	3.41	1.32	3.25	1.24	
Pre5	4.04	1.07	4.03	.96	
Pre6	4.80	.67	4.78	.60	

As noted in Table 5.3 above, perceived premeditation increases as the severity of the crime increases. In five of the slides for this question girls perceived slightly greater impulsivity than boys. A significant difference was noted only in slide 2 where the figure is seen snatching a woman's handbag. The girls tended to perceive that the person had <u>not</u> thought about snatching

the handbag long beforehand while the majority of the boys thought that he had. For most crimes the subjects felt that there was a greater than even chance that the person had thought about committing the crime beforehand.

Unlike the questions measuring risk and thrill seeking, significant differences were noted between the three areas on all six slides for premeditation. For the first five slides (see Appendix Tables 37 to 42), the School 3 children perceived a greater chance for premeditation than the School 1 or School 2 children. This suggests that the working-class children felt that the persons breaking the law were more criminally oriented discounting the possibility that the crimes were committed on a whim.

The final question asking; 'Would you ever break the law in this way?", measures personal criminal propensity. Responses to this question are labelled C1 to C6.

TABLE 5.4

	BOYS		GIRLS		P differences
Variable	Mean	S.D.	Mean	S.D.	between means
C1	2.96	1.39	2.38	1.34	$< .001$
C2	1.41	.88	1.10	.40	$< .001$
C3	2.42	1.39	1.82	1.19	$< .001$
C4	1.57	1.06	1.17	.58	$< .001$
C5	1.44	.92	1.15	.51	$< .001$
C6	1.28	.79	1.08	.39	$< .001$

In agreement with previous studies, boys rate themselves as significantly more criminally prone than girls. Ratings for all of the subjects, however, are quite low with most ratings falling within the 'possibly not' category. There is also an inverse relationship between the severity of the crime and the criminal propensity rating. For the slides depicting someone snatching a handbag (slide 2) and someone robbing a post office (slide 6), the girls are

in almost complete agreement that they would definitely not commit these crimes. Significant differences are also noted between schools for slides 2, 3, 4 and 5 (see Appendix Tables 43 to 48). For the boys, School 1 is seen as having lower criminal propensity ratings than School 2 or School 3. This is reversed, however, for the girls. The School 1 girls showed higher ratings on criminal propensity than the School 3 girls.

Table 5.5 presents the Pearson Product Moment correlations for risk (R) by P, E, N, L, ASB and sex (males).

TABLE 5.5

Risk Perception by Personality, ASB and Sex

Slide	P	E	N	L	ASB	SEX
R1	.081**	.010	.003	.100***	-.001	.098***
R2	-.070**	.012	.040	.043	-.056*	-.053*
R3	.010	.002	.072**	.010	-.030	-.107***
R4	-.057*	.020	.104***	.054*	-.072**	-.081**
R5	-.092***	-.034	.003	.081**	-.119***	-.106***
R6	.025	.034	.011	.022	.005	-.028

(Will the person breaking the law get caught?)

* = $P < .05$
** = $P < .01$
*** = $P < .001$

At first glance, no obvious relationships are evident. Although significance is noted at the $P < .001$ level, no relationship reaches higher than .1. Since a high significance is noted for what are very low correlations, due, in part, to the large population tested, the results must be viewed in light of the trends presented. Taking each column one at a time, P shows a mixed relationship over the six risk items. For the slides depicting someone stealing an apple, stealing from a shop and robbing a post office, P is in the positive direction

with risk. P shows significant negative correlations with snatching a handbag, stealing a car, and breaking into a house to steal valuables.

E shows no significant correlation on any of the risk items. N reveals a positive trend on the risk items with significance found for slides 3 and 4. The L scale also shows a positive relationship with perceived risk. ASB is predominantly in the negative direction with respect to risk. Males also perceive less risk than females over all but the first item.

Generalizations drawn from the correlations might suggest that high P and ASB scorers and males perceive less risk, while high N and L scorers perceive more risk. E is the least related to risk showing no significance on any of the items.

Treating risk perception as a unitary trait, R2, R3, R4 and R5 are collapsed into one and correlated with P, E, N, L, ASB and Sex, as shown in Table 5.6. R1 and R6 were omitted since their response distributions were very skewed (not risky to steal an apple, very risky to rob a post office) and showed very little differentiation between groups.

TABLE 5.6

	P	E	N	L	ASB	SEX
Risk	-.088***	.002	.090***	.080**	-.118***	-.151***

** = $P < .01$
*** = $P < .001$

Although again the relationships are quite low, the significance levels support the generalization that risk perception is related negatively to P and ASB and positively to N and L with E showing no significance in either direction.

Table 5.7 below shows a breakdown of the six thrill seeking (ThS) items according to P, E, N, L, ASB and Sex.

TABLE 5.7

Thrill Seeking by Personality, ASB and Sex

Slide	P	E	N	L	ASB	SEX
ThS1	-.033	.016	.010	.029	.002	-.070**
ThS2	-.069**	-.031	.027	.036	-.082**	-.126***
ThS3	-.010	.047	-.016	.062*	.012	-.000
ThS4	.078**	.023	.037	-.030	.103***	-.038
ThS5	-.004	.028	.021	.037	.033	-.064*
ThS6	-.005	.006	.042	.070**	-.011	-.079**

(Is the person breaking the law just for the fun of it?)

* = $P < .05$
** = $P < .01$
*** = $P < .001$

Little significance is evident between perception of thrill seeking behaviour and personality and ASB. Sex shows the most consistent trend with girls' feeling that the persons breaking the law were doing it more for the fun of it compared with the boys. No prominent trends are noteworthy on any of the other factors.

TABLE 5.8

	P	E	N	L	ASB	SEX
Thrill Seeking	.001	.025	.028	.036	.029	-.088***

*** = $P < .001$

In collapsing the middle four thrill seeking scores shown in Table 5.8 above, the sex factor again reveals a significant negative trend while no clear relationships are noted between perceived thrill seeking and personality.

Correlations between the premeditation/impulsivity items and P, E, N, L, ASB and Sex are presented on Table 5.9 below.

TABLE 5.9

Premeditation by Personality, ASB and Sex

Slide	P	E	N	L	ASB	SEX
Pre1	.014	.032	-.011	.074**	.032	.017
Pre2	.098***	.086***	-.014	-.055*	.118***	.109***
Pre3	.015	.007	.009	.009	-.008	-.038
Pre4	.036	.073**	-.049*	-.019	.063*	.066**
Pre5	.038	.027	.035	-.026	.042	.010
Pre6	.028	.045	.022	-.103***	.049	.012

(Did the person breaking the law think about doing it long beforehand?)

* = $P < .05$
** = $P < .01$
*** = $P < .001$

In looking at the premeditation correlations in Table 5.9, high P, high E and high ASB scorers and boys show correlations in the positive direction for slide 2 (Pre2) suggesting that those subjects tended to perceive that the person snatching the handbag had not acted on impulse, but rather had thought about it beforehand. Neither Pre3 (stealing something from a shop) nor Pre5 (breaking into a house to steal valuables) showed any significant relationships on any of the six factors.

TABLE 5.10

	P	E	N	L	ASB	SEX
Premed.	.077**	.083**	-.013	-.038	.090***	.064*

* = $P < .05$
** = $P < .01$
*** = $P < .001$

Collapsing the middle four premeditation scores, as shown in Table 5.10, reveals positive correlations with P, E, ASB and boys. This would suggest that these individuals perceive less impulsivity on the part of the persons committing the crimes.

The final category, criminality, is broken down by P, E, N, L, ASB and Sex in Table 5.11.

TABLE 5.11

Criminal Propensity by Personality, ASB and Sex

Slide	P	E	N	L	ASB	SEX
C1	.366***	.203***	-.008	-.408***	.567***	.204***
C2	.247***	.098***	-.044	-.107***	.297***	.207***
C3	.327***	.129***	-.012	-.318***	.531***	.208***
C4	.371***	.125***	-.013	-.181***	.457***	.214***
C5	.259***	.137***	-.007	-.177***	.422***	.180***
C6	.252***	.030	.022	-.064*	.276***	.143***

* = $P < .05$
*** = $P < .001$

In many ways this item coincides with the self-report ASB scale in asking the subject to rate his or her own propensity toward breaking the law. In the columns for P, E, ASB and Sex, almost all of the criminality items show significant positive relationships. Conversely, L shows a significant negative correlation on all six items. Surprisingly, N reveals virtually no relationship at all to criminality. Noticeably, the correlations seem to decrease as the severity of the crime increases for P, E, L, ASB and Sex.

TABLE 5.12

	P	E	N	L	ASB	SEX
Criminal Propensity	.399***	.161***	-.023	-.277***	.577***	.268***

*** = $P < .001$

Table 5.12 shows the strong correlations between P, E, L, ASB and Sex and criminal propensity. Overwhelmingly, P is seen as the best of the personality factors in predicting criminality. No support is given to N's predictive power in determining adolescent delinquency.

As a follow-up to Table 3.9 in Chapter 3, the subjects were divided evenly between high, medium and low P, E and N scores on criminality and were averaged for each cell on Table 5.13. The criminality means were obtained by adding the

TABLE 5.13

MEANS ON CRIMINAL PROPENSITY BY PERSONALITY

	+P			=P			-P		
	+E	=E	-E	+E	=E	-E	+E	=E	-E
+N	10.41	8.15	8.71	6.81	6.46	7.11	6.95	6.04	6.06
=N	10.52	10.31	8.26	7.33	7.14	7.05	7.13	6.09	6.07
-N	10.00	9.19	8.55	7.29	7.28	7.09	6.38	6.25	5.63

ANOVA $F = 99.27$ $P < .001$

CRIMINAL PROPENSITY = C2 + C3 + C4 + C5

responses on C2, C3, C4, and C5 (definitely = 5, definitely not = 1) and dividing by the number of subjects.

Comparable to the findings in Table 3.8, subjects scoring high on P, E and N showed significantly higher criminality scores than low P, E and N subjects.

As reviewed in Chapter 1, studies have shown that persons who are criminally oriented tend to be more aware of risk (Rettig and Sinha, 1966). Likewise, other studies have presented the theory that criminals underestimate the risk involved when breaking the law (Bailey and Lott, 1976; Teevan, 1976). Table 5.14 below shows a correlation between the criminality items and the risk items as a test of these conflicting hypotheses.

TABLE 5.14

Risk Perception by Criminal Propensity

	R1	R2	R3	R4	R5	R6
C1	-.020	-.039	-.019	-.012	-.065**	.066**
C2	.001	-.106***	-.068**	-.022	-.105***	.007
C3	.023	-.084***	-.067**	-.074**	-.106***	-.021
C4	-.004	-.075**	-.067**	-.103***	-.089***	-.023
C5	-.033	-.082**	-.055*	-.040	-.161***	-.055*
C6	.012	-.051*	-.032	-.049*	-.086***	-.023

* = $P < .05$
** = $P < .01$
*** = $P < .001$

Most of the risk items in Table 5.14 are negatively correlated with criminality with many of the correlations reaching significance. From this table it might be stated that persons high on criminality tend to perceive <u>less</u> risk, in agreement with the studies of Bailey and Lott (1976) and Teevan (1976).

A varimax rotated factor analysis was run on the Risk Perception Test (R, ThS, Pre and C) and seven factors emerged. A summary of the factors are given in Table 19 in the appendix.

The first factor could be labelled "criminality" because it loaded heavily on C1, C2, C3, C4, C5 and C6. The heaviest loadings were found for the serious crimes (C4, C5 and C6). The second factor could be identified as "thrill seeking". The thrill seeking items of ThS2, ThS3, ThS4, ThS5 and ThS6 were high loaders on this factor. The third factor reflects the premeditation variables. Items of Pre1, Pre2, Pre3, Pre4 and Pre5 showed the highest loadings for this factor.

The fourth factor represents "petty theft" by showing high loadings on the C1 and C3 items: stealing an apple and stealing from a shop. Factor 5 shows only one item above the .4 level which is the risk perception question for someone stealing a car (R4). R2, R5 and R6 were the next highest loaders suggesting that this factor represents serious risk perception. Factor 6 is difficult to interpret. The only item falling within the .4 criterion is Pre6 which is in the negative direction. Thus it represents a sort of impulsivity to rob a post office. The only other item which comes near to expressing some significance is item R1, risk in stealing an apple. A very few individuals perceived any chance for impulsivity in robbing a post office or riskiness in stealing an apple, thus factor 6 either expresses gross misperception or faking. The final factor loads highly on only one item, Pre4. This factor suggests that impulsivity for stealing a car is different from the impulsivity of the other crimes. Because of the immediacy of the situation in slide 4 (a man jumps out of his car to run into a tobacco shop leaving his car door open) there is a strong suggestion that the action of stealing the car was basically an impulsive one. Of all the slides, slide 4 reflects more of an impulsive action.

5.2 SUMMARY OF RISK PERCEPTION RESULTS

To review the results from this chapter, the correlations were overall very low, though because of the large number of subjects tested significance was obtained. In looking at the trends, there is some support for the notion that high P, high ASB and male subjects perceive less risk while high N and

L subjects perceive more risk than low scorers on those traits. E shows no differences on risk perception. Very few significant relationships are noted for thrill seeking although males generally perceive less thrill seeking behaviour than females.

On premeditation, high P, E and ASB scorers and males tend to believe that the person committing the crime did think about doing it long beforehand. The opposite trend is found for high L scorers. Criminality showed the highest consistent correlations with the six factors. P, E, ASB and Sex showed highly significant positive relationships and L significantly negative correlations with criminality. N showed no significant relationship with criminality.

Risk perception was found to be negatively correlated with criminality, thus persons scoring high on criminal propensity perceived less chance that persons committing the crimes would get caught. A varimax rotated factor analysis supported the unitary concepts of "criminality", thrill seeking" and "premeditation". Risk was found to be less of a homogeneous factor. Differentiation was made between high and low levels of riskiness.

CHAPTER 6

6.1 RESULTS: ANALYSIS OF BEHAVIOUR PREDICTION QUESTIONS

The behaviour prediction questions, taken from Stewart's (1976) study, are structurally similar to the Risk Perception Test except that instead of using visual slides the subject read two paragraphs describing someone breaking the law (stealing from a shop and taking a wallet lying on a table) and answered two questions for each paragraph. The first question concerns risk prediction (RP), 'In this situation do you think that you would get caught?", and the second concerns criminality prediction (CP), 'Would you ever break the law in this way?".

Means and standard deviations for risk prediction (RP) are given below (Table 6.1) for boys and girls.

TABLE 6.1

	BOYS		GIRLS		P differences
Variable	Mean	S.D.	Mean	S.D.	between means
RP1	3.33	.95	3.58	.91	$<.001$
RP2	3.34	1.06	3.62	.99	$<.001$

Significant differences are recorded between sexes for both paragraph risk items. The boys rate significantly less risk for both situations than do the girls. In comparing the slide risk with the paragraph risk, R3 (which in many ways is similar to RP1 depicting someone stealing from a shop) has a mean risk score of 3.50 for the boys and 3.68 for the girls, which are higher than the scores reported for RP1. Thus, in the visual test of risk perception the subjects felt that the chances of getting caught were greater compared with the written form of risk prediction. One noteworthy difference between the two measures is the wording of the questions. The paragraph risk question is very personal, 'In this situation do you think that <u>you</u> would get caught?",

compared with the slide risk question which is impersonal, "Will the person breaking the law get caught?".

Means and standard deviations for criminality prediction (CP) are given below for boys and girls.

TABLE 6.2

	BOYS		GIRLS		P differences
Variable	Mean	S.D.	Mean	S.D.	between means
CP1	2.46	1.40	1.94	1.24	$<.001$
CP2	2.17	1.28	1.54	.96	$<.001$

Significant differences are also reported between sexes for both paragraph criminality items: the boys rated themselves as being more criminally prone compared with the girls. Only nominal differences are found between the visual (C3) and the paragraph (CP1) forms of self rating on criminal propensity.

A correlational breakdown of the risk prediction questions for P, E, N, L, ASB and Sex is shown in Table 6.3 below.

TABLE 6.3

	P	E	N	L	ASB	SEX
RP1	-.071**	-.102***	.085***	.080**	-.123***	-.139***
RP2	-.099***	-.120***	.094***	.040	-.153***	-.141***

Significance is noted across all the variables. P, E, ASB and males show a negative correlation with risk prediction while N and L are positively related to risk.

As a comparison between risk perception (slides) and risk prediction (paragraphs), Table 6.4 below shows the collapsed risk perception items (R2, R3, R4 and R5 - taken from Table 5.6 in Chapter 5) and the two risk prediction items (RP1 and RP2) as they relate to P, E, N, L, ASB and Sex.

TABLE 6.4

	P	E	N	L	ASB	SEX
Risk Perception (Slides)	-.088***	.002	.090***	.080**	-.118***	-.151***
Risk Prediction (paragraphs)	-.100***	.135***	.108***	.070**	-.165***	-.164***

** = P < .01
*** = P < .001

The most noticeable difference between the slide test and the paragraph test for the six variables shown above is on Extraversion. E is shown to be unrelated to risk perception in the slide test, while E reveals a significant negative correlation with risk when using paragraph descriptions. Again it can be pointed out that differences between the questions and the test formats could account for the differences found on E. Apart from Extraversion, however, there is a striking similarity on P, N, L, ASB and Sex between the two measures.

Table 6.5 shows the correlations of the criminality prediction (CP) items with P, E, N, L, ASB and Sex.

TABLE 6.5

	P	E	N	L	ASB	SEX
CP1	.349***	.157***	.026	-.312***	.553***	.166***
CP2	.352***	.106***	-.033	-.266***	.493***	.236***

*** = P < .001

As with the Antisocial Behaviour Questionnaire, criminal prediction is significantly positively related to P and E and significantly negatively related to L. Boys are significantly more prone to criminality than girls. N shows no significance.

Comparing criminality (C) with criminal prediction (CP), Table 6.6 shows the collapsed relationships for these two measures for P, E, N, L, ASB and Sex.

TABLE 6.6

	P	E	N	L	ASB	SEX
Criminality (slides)	.399***	.161***	-.023	-.227***	.577***	.268***
Criminal Prediction (paragraphs)	.392***	.151***	-.001	-.325***	.589***	.222***

*** = P $<$ .001

There are remarkable similarities between the slide test of criminality and the paragraph test of criminal prediction as they relate to P, E, N, L, ASB and Sex. P, E, ASB and males show highly positive relationships while L is significantly negatively related to both forms of criminality measurement. N shows no clear relationship on either test.

A varimax rotated factor analysis of the paragraph items (RP1, RP2, CP1, CP2) reveals two distinct factors summarized on Table 19 in the appendix. The first factor loads above .76 on both criminal propensity items and the second factor loads .60 and .67 on the two risk items. The analysis supports the unitary nature of both questions.

6.2 ANALYSIS OF THE COGNITIVE PERCEPTION QUESTION

In the final part of each testing session the subjects were instructed to remember how many people they thought saw the person in slide No. 2 snatch the woman's handbag as she was stepping onto the bus. The means and standard deviations for boys and girls are given in Table 6.7 below.

TABLE 6.7

	BOYS		GIRLS		P differences between means
	Mean	S.D.	Mean	S.D.	
Cognitive Perception	3.56	1.84	3.22	1.64	$<$ .001

The average response was between three and four persons. Overall the boys tended to recall more witnesses present in the slide than the girls.

Correlations are presented for the cognitive perception question (CPQ) on personality, ASB, Sex, R, ThS, Pres, C, RP and RC in Table 6.8.

TABLE 6.8

	P	E	N	L	ASB	SEX
CPQ	.051*	.015	.068**	-.090***	.087***	-.001

	R	ThS	Pres	C	RP	CP
CPQ	-.001	-.048*	-.022	.056*	.110***	.126***

* = $P < .05$
** = $P < .01$
*** = $P < .001$

Persons scoring low on L and high on ASB, RP and CP show a tendency to believe that a greater number of people saw the person snatch the woman's handbag. There is, of course, no objectively correct answer since the question asks each subject to remember how many people they thought saw the person snatch the woman's handbag. There are six people pictured in the slide apart from the woman and the handbag snatcher.

The trend presented in Table 6.8 suggests that low L scorers and high ASB, and CP scorers remembered more persons as witnessing the crime. Thus criminally oriented individuals remembered more persons. The high RP correlation also suggests that persons who had high risk prediction scores on the paragraph test also remembered more witnesses. These trends, however, are not consistent for all the variables.

6.3 SUMMARY OF BEHAVIOUR PREDICTION AND COGNITIVE PERCEPTION QUESTIONS

To review the findings in this chapter, girls predicted greater risk and less criminality than boys on both of the behaviour prediction questions. P, E, ASB

and Sex were negatively related to risk while N showed a significant positive relationship for both situations. Unlike the Risk Perception Test, E showed a significant positive relationship to risk prediction.

Males and high scorers on P, E and ASB showed highly significant correlations with criminality prediction. L was significantly negatively related to criminality prediction while N showed no significance. Amazing similarities were noted between the slide test of criminality and the paragraph form of criminality prediction on the four personality variables, antisocial behaviour and sex.

Analysis of the cognitive perception question showed that girls remembered fewer witnesses on slide No. 2 than boys. Based on correlations between twelve factors, there was a trend that suggested that persons prone toward criminality remembered more witnesses than less criminally prone persons.

CHAPTER 7

7.1 RESULTS: Analysis of SMOKING, FIGHTING and STEALING Items

In his study on personality and conformity in children, Powell (1976) correlated personality with items on the Antisocial Behaviour Questionnaire corresponding to smoking, stealing and fighting. Table 7.1 below shows the correlational directions of the smoking items from the ASB with P, E, N and L for boys and girls. The three items identifying smoking behaviour are: (4) smoking during school hours, (35) buying cigarettes to smoke yourself, and (49) smoking cigarettes. In keeping with Powell's study, correlational directions are presented throughout this chapter, while the actual correlations may be found in the appendix (Tables 49 to 52). The '++' and '--' signs represent significance at the $P < .05$ level in either the positive or negative direction.

TABLE 7.1

	BOYS			GIRLS		
	Item 4	Item 35	Item 49	Item 4	Item 35	Item 49
P	++	++	++	++	++	++
E	++	++	++	++	++	++
N	++	++	++	++	+	++
L	--	--	--	--	--	--

As can be seen, all three smoking items are significantly positively correlated with P, E and N, while negatively correlated with L. These findings support past studies which have found that persons scoring high on P, E and N tend to smoke more than low scorers on these dimensions (Eysenck et al., 1960; Eysenck, 1963a; Rae, 1975; Backhouse and James, 1969).

Dividing the subjects into smokers and non-smokers (smokers being those who answered all three items 'yes' and respectively non-smokers who

TABLE 7.2

MEANS ON ANTISOCIAL BEHAVIOUR FOR NONSMOKERS AND SMOKERS BY PERSONALITY

	+P			=P			-P		
	+E	=E	-E	+E	=E	-E	+E	=E	-E
+N	29.00	25.33	19.89	17.29	14.50	14.00	14.71	12.21	9.15
	40.00	29.40	38.00	28.76	27.50	27.94	24.00	16.67	16.60
=N	29.53	21.60	22.83	18.45	16.43	15.68	14.78	14.65	9.57
	38.25	38.33	38.50	29.50	30.29	27.83	30.00	27.00	19.00
-N	27.77	22.42	15.00	19.66	15.90	13.17	14.21	9.62	8.07
	37.50	37.50	34.57	31.52	29.50	30.17	29.50	16.00	16.33

NONSMOKERS

SMOKERS

NONSMOKERS	ANOVA	F = 114.18	P < .001
SMOKERS	ANOVA	F = 51.11	P < .001

answered the three items in the negative) each group was examined according to personality and antisocial behaviour. Similar to Table 3.8, the smokers and non-smokers were divided into the 27 cells of high, medium and low P, E and N and means on the ASB were obtained for each group shown in Table 7.2.

As predicted, smokers scored consistently higher in all of the 27 cells than non-smokers while also reflecting the previous finding that high scorers on P, E and N are more deviant.

Items reflecting stealing behaviour were extracted from the ASB and examined according to the four personality factors. In all, ten items were identified under the category of STEALING: (9) stealing things from shops or out of cars, (13) stealing school property, (30) stealing money, (39) stealing things from home, (39) taking fruit which does not belong to you from a garden or orchard, (43) stealing anything belonging to another boy or girl, (51) taking an unknown person's car or motorbike for joyriding, (52) planning well in advance to get into a house or flat to steal valuables and carrying the plan through, (53) taking a pedal cycle belonging to an unknown person, and keeping it, and (54) stealing goods or money from slot machines, juke boxes, or telephones. Table 7.3 shows a breakdown of the ten items for P, E, N and L for boys and girls. The '+' or '-' represent the positive or negative direction of the correlation with '++' or '--' representing significant relationships in that direction.

TABLE 7.3

STEALING Items For Boys

	9	13	30	38	39	43	51	52	53	54
P	++	++	++	++	++	++	++	++	++	++
E	++	++	++	+	++	++	++	+	++	++
N	+	++	++	++	--	++	+	+	+	+
L	--	--	--	--	--	--	--	-	--	--

cont'd.

TABLE 7.3 cont'd.

STEALING Items for Girls

	9	13	30	38	39	43	51	52	53	54
P	++	++	++	++	++	++	+	-	+	++
E	++	++	+	+	++	++	-	--	-	++
N	+	++	+	++	+	+	++	+	++	+
L	--	--	--	--	--	--	+	++	++	--

While not showing the consistency found with SMOKING, the overall trend for STEALING is in the predicted direction. P, E and N are generally shown to be positively related to stealing, while L is negatively correlated with stealing behaviour. Notable exceptions are most evident with the girls. Items 51, 52 and 53 show correlations in the opposite direction from what was predicted. This could be accounted for, in part, by the fact that for these items in particular the great majority of the girls answered 'no'. Only 1.6% of the girls answered 'yes' for item 51, .2% answered 'yes' for item 52, and likewise .4% answered 'yes' for item 53. Thus the highly skewed response could quite easily have cancelled out the personality effect. P and L were the strongest in predicting stealing behaviour for boys, while N seemed somewhat weak as a predictive measure.

Six items were extracted from the ASB to represent a FIGHTING category, as suggested by Powell (1976): (11) belonging to a group who go around together, make a row and sometimes get into fights or cause a disturbance, (15) carrying a weapon in case you need it in a fight, (24) getting into fights, (31) throwing stones at people, (32) hitting a teacher, and (45) obtaining money by threatening weaker people. All of these items reflect aggressive, disruptive behaviour. The following table shows the relationship between the six FIGHTING items for P, E, N and L for boys and girls.

TABLE 7.4

FIGHTING Items for Boys

	Item 11	Item 15	Item 24	Item 31	Item 32	Item 45
P	++	++	++	++	++	++
E	++	++	++	++	++	++
N	++	++	++	-	-	+
L	--	--	--	--	--	--

FIGHTING Items for Girls

	Item 11	Item 15	Item 24	Item 31	Item 32	Item 45
P	++	++	++	++	++	++
E	++	++	++	++	++	-
N	+	++	+	-	+	++
L	--	--	--	-	--	+

The relationships shown in Table 7.4 are found to be generally in the predicted direction. P, E and L show significantly high correlations, while N shows the most inconsistency between items.

To further support the finding that smoking behaviour is significantly correlated with deviancy in adolescents, Table 7.5 shows the relationships the three smoking items have with the six criminality items and the two criminal prediction questions for both boys and girls.

TABLE 7.5

SMOKING Items Correlated with Criminality for Boys and Girls

	C1	C2	C3	C4	C5	C6	CP1	CP2
Item 4	++	++	++	++	++	++	++	++
Item 35	++	++	++	++	++	++	++	++
Item 49	++	++	++	++	++	++	++	++

Clearly a positive significant trend is evident between adolescents who smoke and their self-reporting of criminality.

For added interest, the three smoking items are correlated with the risk perception and risk prediction items shown on Table 7.6 to see if smokers generally are aware of more or less risk.

TABLE 7.6

SMOKING Items Correlated with Risk for Boys and Girls

	R1	R2	R3	R4	R5	R6	RP1	RP2
Item 4	+	-	--	-	--	+	--	--
Item 35	+	+	-	-	--	+	--	--
Item 49	-	-	--	-	--	+	--	--

Although not totally consistent throughout, a negative trend is evident between perception and prediction of risk and the three smoking items. This suggests that persons who smoke feel that there is less of a chance that persons committing crimes will get caught. Since there are risks involved in smoking, this table might lead one to predict that smokers are less cognizant or heedful of the hazards involved in smoking.

7.2 SUMMARY of SMOKING, FIGHTING and STEALING

Similar to Powell's findings, the personality dimensions of P, E, N and L do, overall, predict self-reported smoking, stealing and fighting behaviour. P and L are shown to be the most reliable predictors of these behaviours followed by Extraversion. Neuroticism leans in the predicted direction, although not showing the item consistency shared by P, L and E. In using the slide and paragraph forms of measuring criminality, smoking was again shown to predict antisocial behaviour. Finally, smokers were found to show less risk perception and less risk prediction than non-smokers.

CHAPTER 8

DISCUSSION

Since Eysenck's theory of criminality was first published in 1964, numerous studies have attempted to validate the theory that persons who are high on P, E and N are more prone toward antisocial behaviour. This was certainly supported here in the data presented in Chapter 3. As seen in Table 3.9, the +P+E+N group was shown to have the highest ASB scores of all 27 cells. Likewise, the -P-E-N cell showed the lowest ASB score.

By the nature of any self-report questionnaire measurement of deviancy and personality, a certain degree of error is inevitable. Shown, however, by the negligible relationship between L and N (Michaelis and Eysenck, 1971; Eysenck, Eysenck and Shaw, 1974) and based on the fact that the data were obtained under anonymous testing conditions, there is little indication to suggest that the children were faking their responses. The large number of children tested obtained from three distinctly different areas also discounts the possibility that a chance occurrence has taken place. Supported by the findings of Allsopp (1975), Powell (1976), Gibson (1969b) and others, it can be safely stated that the personality dimensions of P, E, N and L serve, to a very large extent, in predicting anti-social behaviour in normal children.

The model which accompanies Eysenck's theory of criminality is the "conditionability" model of behaviour. As briefly reviewed in Chapter One, the model is based on the premise that inherited traits predispose individuals toward either adequate or inadequate conditioning ability. Those with a propensity toward good conditioning are better able to adjust to social norms of acceptable and unacceptable behaviour. Likewise, those persons who either condition badly or who were not conditioned properly in their youth are more likely to commit antisocial behaviour and be labelled as deviant. Although this study does not present evidence either for or against the conditionability model, it might be

of some interest to examine the results in view of past studies which have related E and N with conditioning ability. It should also be pointed out that, as yet, P has not been incorporated within the conditioning model. Ongoing studies at the Institute of Psychiatry are now examining how extreme P scorers respond on classical conditioning tasks such as eye blink response, etc. For the purpose of discussion, however, we shall examine the personality traits of P, E, N and L individually as both predictors of a person's conditionability and predictors for criminal behaviour.

As shown by the data, P reveals the highest correlation with antisocial behaviour. This supports the notion that high P persons are at risk in society. P also emerges as a masculine trait with implications that "maleness" is a major identifying quality in P. With the description of the high P scorer as being a loner who does not care about the fact that he is different and who generally shows no feelings for others, his predisposed indifference to rules and social norms makes him a candidate for delinquent activity.

A correlation of .2 was found between P and E which agrees with the intercorrelations published by Eysenck and Eysenck (1975) on the J.E.P.Q. for girls only. For high P scoring teenage girls it seems that they are generally more precocious compared with low P scoring girls of the same age. Of recent interest is the finding that high levels of plasma testosterone were found to be present in individuals showing aggressive behaviour and social dominance. As reviewed and discussed by Eysenck and Eysenck (1976), there is room to suggest that P is a reflection of male hormonal influence in both males and females.

Extraversion also showed a significantly high relationship to ASB. Similar to the P scale, high E scorers were prone to smoke, steal and fight more than low E persons. Again the extraverted person seems predisposed toward getting into trouble and, as predicted by Eysenck (1977a), does not conform very readily.

Studies such as Hormuth et al. (1977), and Gibson (1967b) argue that the impulsivity component of extraversion contributes to antisocial behaviour to a greater extent than the sociability factor. Powell (1976), however, found that the impulsivity element of E showed no obvious correlation with misbehaviour. He found no evidence that impulsivity and sociability related differently to any of the conformity variables used in this study.

Although no direct impulsivity measure was employed in the present study, the concept "takes risks" (Table 4.1) shows a high correlation with E for boys while the girls seemed to relate more to the sociability aspect of E ("stays out late", "good looking"). Eysenck and Eysenck (1963b, 1971a) present evidence to suggest that impulsivity more accurately predicts criminality while discussing the dual nature of the Extraversion scale.

Neuroticism showed only a mild positive relationship with ASB. This has been supported in similar studies (Powell, 1976; Shapland and Rushton, 1975; Hindelang, 1971) although Allsopp (1975) reported a high positive correlation between N and ASB. From the data it could be suggested that N increases ASB only when interacting with E, while on its own it is not an accurate predictor of deviancy in adolescents. It has been noted in criminal studies, as reviewed by Allsopp (1976), that Neuroticism plays a much more significant role in identifying adult rather than child offenders.

The Lie scale in many ways is a measure of conformity. Quite the opposite from P, the high L scorer tries to please others and acts in a conforming way. Second only to P in predictability, L is significantly negatively related to ASB and criminality. It appears that the L scale identifies those individuals who condition well. For the very high L scale scorer, who, in fact, is not purposely lying, one could say that he conditions too well, for he has a need to abide by every social expectation.

A negative correlation of -.17 is noted between E and L. Table 4.1 shows significance between L and the two concepts of "has few friends" for both boys and girls and "enjoys staying home" for girls. Quite possibly as the high L scorer reaches mid adolescence his over-conformity labels him as a "do-gooder" which, being an unpopular characteristic, would isolate him as much as the high P scorer is isolated. Thus both extremes are seen as odd and unpopular.

The slide and paragraph measures of criminality (C & CP) shows further support for the predictability of P, E, N and L as presented in Table 6.6. As an independent measure of self-report antisocial behaviour, C and CP showed consistent support for Eysenck's theory of criminality. P and L again proved to be highly correlated with criminality; .39 and -.30 respectively. To a lesser extent sex differences (.24) and E (.16) also showed correlations in the predicted direction. N showed no predictive ability on either measure of criminality. With the consistency shown between differing measures of self-reported delinquency, further substantiation can be claimed for the Eysenckian model.

In examining the tables in the appendix which show correlational breakdowns by school, significant differences are found on many variables; notably on deviant behaviour. School 3 boys show much higher ASB scores than School 1 boys. Conversely the School 1 girls show higher ASB scores than reported by the School 3 girls. These differences are consistent with the personality scores found in each group. The School 3 boys show higher P scores compared with the School 1 boys. Likewise, the School 1 girls have much higher N and lower L scores than the School 3 girls. Thus, although regional differences are noted on the ASB, these differences could be accounted for, in part, by the personality scores on the J.E.P.Q.

Table 8 shows the percentage of responses on the ASB items for the boys from each of the three areas. After averaging the responses together, School 3 boys admit to a larger percentage of misbehaviour than School 2 who, in turn, show a higher percentage of admissions than the School 1 boys. Of interest is the fact that area seems to affect certain types of delinquent behaviour. Noticeable differences on items 1 (fireworks in the street), 10 (breaking windows in empty houses), 13 (not paying bus fare), 19 (turning over bins in the street) and 39 (stealing fruit from an orchard) reveal how availability can increase or decrease certain behaviours. Also how the schools are structured affects the behaviours of the students. Items such as 8 (being cheeky to a teacher), 17 (swearing at a teacher), 29 (shouting in lessons) and 50 (gambling in school) illustrate how school rules and the enforcement of school rules can curb anti-social behaviour. The contrast between the disciplined School 1 and School 2 and the relatively chaotic School 3 was especially evident to this researcher. These behavioural differences attributed to the area or the school do not, however, account for the more serious delinquent behaviour. Combined with the personality correlation findings, it could be suggested that genetic and socio-economic variables interact in determining each individual's delinquent propensity.

Before discussing the results of the Risk Perception Test and the Behaviour Prediction Questions, a few comments need to be made concerning the size of the correlations found. As argued by Eysenck (1972) and discussed by Nias (1975), if most of the correlations found in a study were high then little can be stated about the data without considering overlapping of factors or the obviousness of the results. On the other hand, correlations which are consistently low are meaningful, especially when high significance levels are obtained. If, for instance, each factor were to add only 10% to the overall effect then the individual correlations would be quite low, but the importance of the factors would, none the less, still be present. If the measures used by the researcher were, in any way, unreliable then the additions of extraneous factors would also lead to

lower correlations. Thus, it is the consistently low significant correlations which present the most challenge and interest to the researcher.

In reviewing the results of the Risk Perception Test in Chapter 5, out of over 200 correlations only 9 were above .3. The majority of the correlations barely reached .1 while still showing significance at the $P < .001$ level. Tables 5.6, 5.8, 5.10, 5.12, 6.4 and 6.6 show that when collapsing the items, as in collapsing the items of any questionnaire in order to measure one factor, the correlations are strengthened. The results, however, shall be discussed in terms of the prominent trends found between the correlations.

The initial idea in undertaking this study stems from the fact that delinquency is risky behaviour. Delinquency is due to both the personality and situational factors which induce, directly or indirectly, a certain propensity toward risk behaviour. By better understanding how personality relates to risk perception, a closer understanding of delinquency can be obtained. Unlike past risk perception studies which presented paragraphs describing someone breaking the law, cartoons were incorporated into this study as an attempt to measure how individuals physically perceive risk factors. Policemen and witnesses were drawn to be plainly visible to the subjects, while the lack of definition of the cartoons allowed for some imagination in determining the gender and race of the offenders. In this way, it was hoped that the subjects would be able to identify better with the deviant persons and visibly estimate how much risk was involved in each situation.

The results in Chapters 5 and 6 were in accord with the predictions made in the hypothesis section in Chapter 2. Overall the boys perceived less risk than the girls. P and ASB were found to be negatively correlated with risk perception while N and L were positively related to perceived risk. No differences were found for E on the slide test while E was significantly positively related to risk on the paragraph measures.

It should be pointed out that the concept of risk is subjective. If, for instance, a person shows no concern at all for being caught and prosecuted for committing a crime, then it would be hard to suppose that he perceived the same riskiness associated with the crime compared with someone who is fearful of being caught and embarrassed for having committed a crime. Risk, then, is not a stable concept but rather a combination of subjective perceptions and evaluations. In view of the Eysenckian model, conditioning would play an important part in establishing a risk orientation. Those who condition poorly would be less prone to adopt a social sense of riskiness. On the other hand, those who condition too well would represent the opposite end of the continuum and perceive potential risk in an otherwise non-threatening situation.

A quote from Hare's (1970) research on psychopathy (as mentioned by Eysenck, 1977a) describes how psychopaths do not condition well to fear or threat that would be associated with risk. Hare summarizes the results of his research as follows:

> 'It appears that psychopaths do not develop conditioned fear responses readily. As a result, they find it difficult to learn responses that are motivated by fear and reinforced by fear reduction. The fact that their behaviour appears to be neither motivated nor guided by the possibility of unpleasant consequences, particularly when the temporal relationship between behaviour and its consequences is relatively great, might be interpreted in this way. There is some evidence that psychopaths are also less influenced than are normal persons by the relationship between past events and the consequences of their present behaviour." (p. 93-94.)

Hare's research was mostly directed at primary psychopaths, while there is room to suggest that if high P scorers would not learn from punishment then they would also not assess risk in the same way as low P scorers. The findings in this study support the hypothesis that high P scorers perceive significantly less risk than low P scorers due to the idea that they have difficulty in learning from past mistakes. While not as consistent compared with P, Extraversion was shown to be unrelated to risk on the slide measure of risk perception in

agreement with Gray's (1971) finding that extraverts are insensitive to punishment.

For those high P and high E persons who show no concern for law and order and who have not internalized a social sense of "risk", their actions would be affected by something other than risk. In fact, for the extreme scorers, the term "risk" is quite meaningless. A test of risk perception, however, is one way of identifying how well a person has been socially conditioned to perceive threat.

To generalize from the data which shows high P scorers to perceive less risk than high E scorers, the extravert could be seen as being aware of the risk involved, unlike the high P scorer, but for impulsive and thrill seeking reasons he would still be inclined to commit delinquent acts. High P individuals, on the other hand, would not sense that they would get caught and they would not tend to conceptualize how risky a given situation may be. This sense of immunity to being caught would encourage their antisocial behaviour. Thus, although the high P and high E scorers show the same deviant behaviour, they would be delinquent for different reasons.

This idea is supported in the finding that the high E subjects felt that the person breaking the law was doing it for the fun of it, while the high P scorer felt that the person was not breaking the law for the fun of it. It is to this idea that further research needs to be focused.

N showed a positive correlation with risk as predicted. The higher the Neuroticism score the more susceptible the person would be to seeing risk factors. The highly conditioned L scorers also tended to see more risk. Both the high N and high L individuals help to perpetuate the old adage that "the criminal always gets caught in the end". The individuals who have committed crimes have, as a result, become aware of how often crimes go unreported and undetected, and, as found by Claster (1967), attach a realistic probability of

capture to any law breaking situation. Most law abiding citizens are deterred from committing crimes by what they think is the certainty of capture and what they think is the severity of the punishment once they are caught. This can be quite unrelated to the objective chances of being caught and the actual penalty for the crime. Since average individuals are quite ignorant of the punishments imposed on crimes and few keep up with the frequent changes in the law, criminals may perceive less risk than noncriminals due to the fact that they are very knowledgeable about imposed penalties and they are aware of how often crimes go unreported and unpunished. So, in many ways, criminals may have a more objective assessment of the risks related to committing a crime. This might partially account for the results on the Cognitive Perception Question. In slide 2, showing someone snatching a woman's handbag, the high ASB scorers recalled more witnesses than the low ASB subjects, although they perceived less risk of capture. Despite the numerous witnesses present, the high ASB scorers still might sense that the chances of escaping without capture are relatively good.

In examining risk behaviour, Rettig's studies established three general findings: 1) Risk increases directly with the amount of penalty; the severity of the punishment affects risk behaviour, not necessarily the likelihood of getting caught. 2) When the risk situation is personalized risk perception is increased. 3) Non-cheaters are less aware of high and low risk conditions compared with cheaters.

Similar to Rettig's first finding, the means on Table 5.1 show that as the severity of the crime increased the action was judged to be more risky. Although the "objective" chances of being seen are similar between slide 1 (stealing an apple) and slide 6 (robbing a bank) the action in the last slide is judged to be far more risky than the action in the first slide due to the seriousness of the offence.

David Thornton (1978) discovered this same phenomenon when he asked male prisoners to rate twenty offence descriptions on a scale from one to ten judged on seriousness ('How serious is this offence?') and risk ('How likely is he to get caught?". Thornton found that as the offence increased in seriousness there was a proportional increase in estimated risk.

Although an adequate test of Rettig's second finding was not incorporated into this study, the subtle personalizing difference between the two measures of risk (slide and paragraph) seemed to affect the responses as shown on Table 6.4. All correlations, except L, are higher in the personalized paragraph risk questions. It seems that when substituting "you" for "the person" there is a greater personal involvement in the risk assessment. As reported by Rettig, the personalization factor would tend to make the subject more cautious in his estimation of risk.

Finally, Rettig found that those persons who would admit to committing crimes were more sensitive to the riskiness of any criminal situation and, in fact, would perceive more risk than a non-criminally oriented person. Studies by Bailey and Lott (1976), Chiricos and Waldo (1970), Claster (1967) and Teevan (1976), however, present opposing data showing criminals to be more willing to commit criminal acts while perceiving less risk for each act. As reported previously, no personality differences were examined in any of the above studies.

Tables 5.6, 5.14, 6.3 and 6.4 show that persons scoring high on ASB perceived less risk overall than low ASB scorers contrary to Rettig's hypothesis. One possible explanation for the differences between the studies comes from the fact that Rettig used undergraduate and graduate university students for his subjects who are traditionally known to be high on N. Since high N subjects generally perceive more risk than others this would help to explain the observed differences. The present study shows that the perception of risk varies between personality types, so that individual differences play a major role in how risk

is perceived. In agreement with Caroline Stewart's study (1976), the high P scorer perceived significantly less risk than the low P scorer.

One surprise in the data came as a result of the third question on the slide measurement of risk concerning what was initially designed to be perception of impulsivity; 'Did the person breaking the law think about doing it long beforehand?". The question was included as an estimation of the degree to which the person committing the crime acted on the spur of the moment. It was hoped that the correlation between antisocial behaviour and impulsivity would emerge with certain subjects feeling that the persons depicted in the cartoons were rather impulsive. The data, however, showed an additional factor to be prominent. The high ASB and P scorers felt that the person had thought about committing the crime long beforehand. In fact, after some reflection, it appeared that the question was measuring something quite apart from impulsivity. It was not only measuring how long before the crime was committed the person planned to commit the crime, but also how criminally prone the person was in the first place. The label "premeditation" was attached to more accurately explain the findings. Slide 2, showing someone snatching a woman's handbag, revealed significant positive correlations on P, E, ASB and boys for premeditation. These persons felt that the cartoon characters had definitely thought about committing the crimes long beforehand unrelated to whether they were impulsive individuals or not. Thus, although some of the actions presented in the slides were most probably initiated on impulse (snatching the woman's handbag, stealing the car, etc.) certain persons were ready to act when the criminal situation arose. Persons who would commit crimes similar to the ones illustrated in the slides would also need to have a criminal orientation which means that they would have thought of committing the crime beforehand. With hindsight, an independent measure of impulsivity, such as an impulsivity questionnaire, would have been most helpful in understanding how personality affects antisocial behaviour.

As an additional observation, it seems that slides one and six represented situations which were too extreme. Slide six, showing persons robbing a post office, was consistently rated as being too risky. Slide one, on the other hand, portraying someone stealing an apple, was not judged to be risky at all. As a result little differentiation between groups were obtained for either situation. Personality differences seemed to surface mostly in the intermediate risk conditions.

One of the chief difficulties with any risk study is the validity of the measures used. Many studies are hampered by the artificiality of the experimental situation. In the present study the cartoons employed represent a technique which shares some similarities to that of a projection test. As a result the responses are variable and are not altogether a valid measure of perceived risk. The testing conditions, wherein the subjects were comfortably seated in classrooms looking at cartoons of someone breaking the law, are somewhat removed from the actual risk situation in which, for instance, someone was actually planning to steal something from a shop. Despite the crude measures used, however, significant personality differences emerge which imply that personality does play a significant role in the perception of risk.

The Stereotyping Test was added to this study in order to act as a further perceptual measure of conformity. With both the Stereotyping Test and Risk Perception Test employing cartooned figures in measuring perception it was hoped that some consistency between personality and perception would be evident from both measures.

The results from the stereotyping data confirm the hypothesis that girls stereotype more consistently as a group than boys. As shown in the histograms on pages 71 - 87 it is also seen that male models are stereotyped stronger than female models. Combined from the fact that males scored much higher on P than females together with the above finding that males stereotype less well, it

could be predicted that high P scorers would be less consistent as a group in stereotyping behaviour than low P scorers.

At first glance the finding reported by Powell (1976, 1977) that high P scorers misperceive social stereotypes more often than low P scorers was not supported in this study as shown in Tables 4.2 and 4.3. Only a few concepts actually differentiated the extreme groups presented on Table 4.4. One must, however, take into consideration the differences in testing procedures employed by Powell and adopted in the present study for the Stereotyping Test. Powell had his subjects rank order all six models from most to least for each concept, while in the present study each subject chose only one model which best represented each concept. Thus, in Powell's case, there were 6 X 5 X 4 X 3 X 2 X 1 = 720 ways in which the subjects could relate the concepts to the models. In the present study there were only six possibilities for allocating the models to each concept. The method employed by Powell would tend to pick up subtle differences between personality groups in stereotyping behaviour while the small minority found in the present study represent an important minority considering the probabilities involved. Although strong support cannot be found in this study for the hypothesis that +P persons misperceive social stereotypes, there is justification for using stereotyping as a method for examining individual differences.

In correlating the concept of "Like I am" with the other sixteen stereotyping concepts, as shown in Tables 23 and 24, all of the correlations are found to be in the predicted direction with the personality scales. Table 4.1 strongly supports the widely held view that girls are labelled delinquent mostly for sex offences while boys are sent to Borstal mostly for aggressive acting out behaviour. This is further supported in Exhibit 3.1 which shows girls to answer "yes" more frequently than boys on the ASB on those items which suggest passive-aggressive type behaviour, e.g. being late for school or refusing to do school work or homework. On the very aggressive items the boys showed significantly higher responses compared with the girls.

Unlike the Shapland (1975) study, the high ASB scorers showed inconsistent self concept ratings. Differences are noted between boys and girls displayed in Tables 23 and 24 in the appendix. The high ASB boys did not especially like parties, they saw themselves as being less clever, and having fewer friends while they felt that they were better looking than the low ASB boys. The high ASB girls, in contrast, liked parties, saw themselves as brighter, and better looking than the low ASB girls. They admitted, however, to having fewer friends than the low ASB girls.

Because all of the subjects tested were "normal" as against self concept studies using selected official delinquents, the consistency reported in past studies (Lively et al., 1962; Masters and Tong, 1968; Noble, 1971; Campbell, 1976) which show delinquents to have predominantly negative self concepts would not be expected here. The generally positive responses, however, found for the high ASB girls are in agreement with the results of Stewart et al. (1973). These findings support the idea that antisocial behaviour can be quite unrelated to attractiveness and intellect. Support can be claimed for the predispositional theory of criminality quite divorced from other socially acceptable qualities inherent within the individual.

There are several suggestions which can be made regarding further study in this area which arose over the course of this investigation. An independent measure of impulsivity would be most informative in relating personality with risk. In this way a better understanding between the high P and high E individuals could be obtained in determining their motive for criminal behaviour. Secondly, an effort should be made to personalize the test to allow for further involvement in the risk assessment condition. Crimes other than stealing should also be examined. Thirdly, a measure which would more realistically simulate a risk taking situation should be incorporated to help in assessing actual risk taking behaviour. Finally, other age groups such as normal adults and primary children should be tested to better understand how risk and personality varies between ages.

In light of the well known phenomenon of spontaneous remission of delinquency with age, it would be of interest to see if perceived risk would increase as subjects get older coinciding with the decreased delinquent behaviour.

It can be concluded from the present findings that delinquency is due to both personality and situational factors, although personality seems to play a more important role in predicting delinquency. If predispositional factors could be accurately identified in youths through assessment of personality traits and perception characteristics then inroads can be made toward identifying youths who are at risk with respect to future delinquency. In examining risk perception by way of individual differences further light can be shed on that most pressing of social matters - delinquency.

CONCLUSIONS:

This study has added further evidence in the examination of the theory that individual differences significantly influence behaviour. It has firstly been shown that certain persons do have different perceptions of risk in predicted agreement with their personalities. Secondly, this study has pointed to the inverse relationship found between perceived risk and delinquent behaviour. Finally, consistent with other findings , it has been shown that with newly adopted cartoon and paragraph measures of self-reported antisocial behaviour, strong support is shown for Eysenck's theory of criminality. Surprisingly, stereotyping behaviour did not show differences between groups which warrants further investigation.

The following statements can be made concerning the findings reported in this study:

1. High P scorers tend to be deviant. They perceive less risk and are more prone to breaking the law. P is closely allied with masculinity and is expressed through nonconformity.

2. High E persons are prone to breaking the law. Like +P individuals, they tend to smoke, steal and fight more than introverts. They are aware of risk factors but for impulsive and thrill seeking reasons show a high propensity toward delinquent behaviour.

3. High N individuals generally perceive more risk than low N scorers. N by itself does not predict delinquency, but tends to increase delinquency in conjunction with P and E. High N subjects smoke more than low N persons. N affects deviancy more in girls than with boys.

4. High L scorers tend to perceive more risk. They are very conforming and are less prone to breaking the law. High L individuals generally report to neither smoke, steal or fight.

5. Boys generally perceived less risk than girls. They are also less conforming and are more criminally prone than girls.

6. Persons who smoke tend to perceive less risk.

7. Criminality is negatively correlated with risk perception. Delinquent prone children feel more immune to censure and capture.

APPENDIX

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E.P.Q. (Junior)

Age..... Sex .....

INSTRUCTIONS Please answer each question by putting a circle around the "YES" or the "NO" following the question. There are no right or wrong answers, and no trick questions. Work quickly and do not think too long about the exact meaning of the questions.

REMEMBER TO ANSWER EACH QUESTION

1.	Do you like plenty of excitement going on around you?	YES	NO
2.	Are you moody?	YES	NO
3.	Do you enjoy hurting people you like?	YES	NO
4.	Were you ever greedy by helping yourself to more than your share of anything?	YES	NO
5.	Do you nearly always have a quick answer when people talk to you?	YES	NO
6.	Do you very easily feel bored?	YES	NO
7.	Would you enjoy practical jokes that could sometimes really hurt people?	YES	NO
8.	Do you always do as you are told at once?	YES	NO
9.	Would you rather be alone instead of meeting other children?	YES	NO
10.	Do ideas run through your head so that you cannot sleep?	YES	NO
11.	Have you ever broken any rules at school?	YES	NO
12.	Would you like other children to be afraid of you?	YES	NO
13.	Are you rather lively?	YES	NO
14.	Do lots of things annoy you?	YES	NO
15.	Would you enjoy cutting up animals in Science class?	YES	NO
16.	Did you ever take anything (even a pin or button) that belonged to someone else?	YES	NO
17.	Have you got lots of friends?	YES	NO
18.	Do you ever feel "just miserable" for no good reason?	YES	NO
19.	Do you sometimes like teasing animals?	YES	NO
20.	Did you ever pretend you did not hear when someone was calling you?	YES	NO
21.	Would you like to explore an old haunted castle?	YES	NO
22.	Do you often feel life is very dull?	YES	NO
23.	Do you seem to get into more quarrels and scraps than most children?	YES	NO
24.	Do you always finish your homework before you play?	YES	NO

PLEASE TURN OVER

25. Do you like doing things where you have to act quickly? ..... YES NO
26. Do you worry about awful things that might happen? ..... YES NO
27. When you hear children using bad language do you try to stop them? ..... YES NO
28. Can you get a party going? ..... YES NO
29. Are you easily hurt when people find things wrong with you or the work you do? ..... YES NO
30. Would it upset you a lot to see a dog that has just been run over?.. YES NO
31. Do you always say you are sorry when you have been rude? ..... YES NO
32. Is there someone who is trying to get their own back for what they think you did to them? ..... YES NO
33. Do you think water ski-ing would be fun? ..... YES NO
34. Do you often feel tired for no reason? ..... YES NO
35. Do you rather enjoy teasing other children? ..... YES NO
36. Are you always quiet when older people are talking? ..... YES NO
37. When you make new friends do you usually make the first move?... YES NO
38. Are you touchy about some things? ..... YES NO
39. Do you seem to get into a lot of fights? ..... YES NO
40. Have you ever said anything bad or nasty about anyone? ..... YES NO
41. Do you like telling jokes or funny stories to your friends? ..... YES NO
42. Are you in more trouble at school than most children? ..... YES NO
43. Do you generally pick up papers and rubbish others throw on the classroom floor? ..... YES NO
44. Have you many different hobbies and interests? ..... YES NO
45. Are your feelings rather easily hurt? ..... YES NO
46. Do you like playing pranks on others? ..... YES NO
47. Do you always wash before a meal? ..... YES NO
48. Would you rather sit and watch than play at parties? ..... YES NO
49. Do you often feel "fed-up"? ..... YES NO
50. Is it sometimes rather fun to watch a gang tease or bully a small child? ..... YES NO
51. Are you always quiet in class, even when the teacher is out of the room? ..... YES NO
52. Do you like doing things that are a bit frightening? ..... YES NO
53. Do you sometimes get so restless that you cannot sit still in a chair for long? ..... YES NO
54. Would you like to go to the moon on your own? ..... YES NO
55. At prayers or assembly, do you always sing when the others are singing? ..... YES NO

56.	Do you like mixing with other children?	YES	NO
57.	Are your parents far too strict with you?	YES	NO
58.	Would you like parachute jumping?	YES	NO
59.	Do you worry for a long while if you feel you have made a fool of yourself?	YES	NO
60.	Do you always eat everything you are given at meals?	YES	NO
61.	Can you let yourself go and enjoy yourself a lot at a lively party?..	YES	NO
62.	Do you sometimes feel life is just not worth living?	YES	NO
63.	Would you feel very sorry for an animal caught in a trap?	YES	NO
64.	Have you ever been cheeky to your parents?	YES	NO
65.	Do you often make up your mind to do things suddenly?	YES	NO
66.	Does your mind often wander off when you are doing some work?..	YES	NO
67.	Do you enjoy diving or jumping into the sea or a pool?	YES	NO
68.	Do you find it hard to get to sleep at night because you are worrying about things?	YES	NO
69.	Did you ever write or scribble in a school or library book?	YES	NO
70.	Do other people think of you as being very lively?	YES	NO
71.	Do you often feel lonely?	YES	NO
72.	Are you always specially careful with other people's things?	YES	NO
73.	Do you always share all the sweets you have?	YES	NO
74.	Do you like going out a lot?	YES	NO
75.	Have you ever cheated at a game?	YES	NO
76.	Do you find it hard to really enjoy yourself at a lively party?	YES	NO
77.	Do you sometimes feel specially cheerful and at other times sad without any good reason?	YES	NO
78.	Do you throw waste paper on the floor when there is no waste paper basket handy?	YES	NO
79.	Would you call yourself happy-go-lucky?.....	YES	NO
80.	Do you often need kind friends to cheer you up?	YES	NO
81.	Would you like to drive or ride on a fast motor bike?	YES	NO

PLEASE MAKE SURE YOU HAVE ANSWERED ALL THE QUESTIONS

1. 2. 3. 4.

ANTISOCIAL BEHAVIOUR QUESTIONNAIRE

Please say whether you have done these things by putting a circle around the 'YES' or the 'NO'. All your answers will be private, so please say everything that you have done.

1.	Letting off fireworks in the street.	YES	NO
2.	Riding a bicycle without lights after dark.	YES	NO
3.	Travelling on a bus or train without a ticket or paying the wrong fare.	YES	NO
4.	Smoking during school hours.	YES	NO
5.	Staying away from school without permission.	YES	NO
6.	Going into an 'X' film under 16 years of age.	YES	NO
7.	Moving about the classroom after the teacher has told you to sit down.	YES	NO
8.	Being cheeky to a teacher.	YES	NO
9.	Stealing things from shops or out of cars.	YES	NO
10.	Breaking windows in empty houses.	YES	NO
11.	Belonging to a group who go around together, make a row and sometimes get into fights or cause a disturbance.	YES	NO
12.	Driving a car, or motorbike or scooter, on public roads.	YES	NO
13.	Stealing school property.	YES	NO
14.	Causing damage in public places, like cinemas or buses or in the street.	YES	NO
15.	Carrying a weapon in case you need it in a fight.	YES	NO
16.	Going into a pub, or buying alcohol from a shop.	YES	NO
17.	Swearing at a teacher.	YES	NO
18.	Trespassing anywhere you are not supposed to go such as railway property, private gardens, empty houses.	YES	NO
19.	Littering streets or pavements by smashing bottles or turning over dustbins.	YES	NO
20.	Buying or swopping something that you think might have been stolen.	YES	NO
21.	Using swear-words.	YES	NO
22.	Breaking into private property to steal something.	YES	NO
23.	Being cheeky to strangers or making a nuisance of yourself in public places.	YES	NO

24.	Getting into fights.	YES	NO
25.	Being late for school.	YES	NO
26.	Refusing to do schoolwork or homework.	YES	NO
27.	Not wearing proper clothing for P.E. and Games at school.	YES	NO
28.	Cheating by copying from someone else in a test.	YES	NO
29.	Shouting in lessons.	YES	NO
30.	Stealing money.	YES	NO
31.	Throwing stones at people.	YES	NO
32.	Hitting a teacher.	YES	NO
33.	Making a serious telephone call as a joke, like ringing the fire brigade when there is no fire.	YES	NO
34.	Riding on the back of a motorbike or scooter when the rider is a learner.	YES	NO
35.	Buying cigarettes to smoke yourself.	YES	NO
36.	Taking drugs.	YES	NO
37.	Dropping rubbish on the ground.	YES	NO
38.	Stealing things from your home.	YES	NO
39.	Taking fruit which does not belong to you from a garden or orchard.	YES	NO
40.	Tearing or throwing on to the floor things belonging to other people.	YES	NO
41.	Doing things to people as a joke, like pushing them into the water or pulling their chair away as they sit down.	YES	NO
42.	Deliberately staying out later than you are allowed to.	YES	NO
43.	Stealing anything belonging to another boy or girl.	YES	NO
44.	Pulling up or trampling down flowers in a park or garden.	YES	NO
45.	Obtaining money by threatening weaker people.	YES	NO
46.	Telling lies about someone you don't like to get them into trouble or getting others to gang up on them.	YES	NO
47.	Damaging school property, like furniture or books.	YES	NO
48.	Knocking on people's doors then running away.	YES	NO
49.	Smoking cigarettes.	YES	NO
50.	Gambling in school.	YES	NO

51.	Taking an unknown person's car or motorbike for joyriding.	YES	NO
52.	Planning well in advance to get into a house or flat to steal valuables and carrying the plan through.	YES	NO
53.	Taking a pedal cycle belonging to an unknown person, and keeping it.	YES	NO
54.	Stealing goods or money from slot machines, juke boxes, or telephones.	YES	NO
55.	Using any kind of weapon in a fight.	YES	NO

Stereotyping Test

For each concept listed below check one male and one female figure (A, B, C, D, E or F) from the slide which best represents that concept.

		FEMALE	MALE
1.	Likes parties	_____	_____
2.	Stays out late	_____	_____
3.	Clever	_____	_____
4.	Young	_____	_____
5.	Good looking	_____	_____
6.	Old	_____	_____
7.	Has few friends	_____	_____
8.	Like I will be	_____	_____
9.	Likes kissing	_____	_____
10.	Takes risks	_____	_____
11.	Smokes cigarettes	_____	_____
12.	Gets into trouble	_____	_____
13.	Enjoys staying home	_____	_____
14.	Has sex before marriage	_____	_____
15.	Steals from shops	_____	_____
16.	Like I am	_____	_____
17.	Gets into fights	_____	_____

Risk Perception Test Page 1

You will be seeing some slides showing cartoons of a person or persons breaking the law. Look at each slide carefully and then answer the four questions on each page for every slide (cartoon). Check either 'definitely', 'possibly', '50/50 chance', 'possibly not', or 'definitely not', for each question. There are no right or wrong answers. Check what you think is the correct answer for you. Be sure to answer every question.

Example:

Will you ever break the law in any way?

YES _____ NO

definitely | possibly | 50/50 chance | possibly not | definitely not

Slide No. 1

1. Will the person breaking the law get caught?

YES _____ NO

definitely | possibly | 50/50 chance | possibly not | definitely not

2. Is the person breaking the law just for the fun of it?

YES _____ NO

definitely | possibly | 50/50 chance | possibly not | definitely not

3. Did the person breaking the law think about doing it long beforehand?

YES _____ NO

definitely | possibly | 50/50 chance | possibly not | definitely not

4. Would you ever break the law in this way?

YES _____ NO

definitely | possibly | 50/50 chance | possibly not | definitely not

Behaviour Prediction Questionnaire

Please read the paragraphs carefully and answer the two questions for each situation described.

I. You are in a department store; there are store detectives about, but you feel you know how to dodge them. If they spot you taking something, they'd get you immediately, and you could be sentenced for it. You pick up something that goes easily into your pocket.

1. In this situation do you think that you would get caught?

YES _____ NO

definitely	possibly	50/50 chance	possibly not	definitely not

2. Would you ever break the law in this way?

YES _____ NO

definitely	possibly	50/50 chance	possibly not	definitely not

II. You will be clearly observed and probably recognized picking up the wallet you see lying on the table; but you feel you can get away quickly and that it'll take ages for them to find you. Even if the police do come around about it, you can say you were going to hand it in anyway, sometime. You won't get more than a caution. You take the wallet.

1. In this situation do you think that you would get caught?

YES _____ NO

definitely	possibly	50/50 chance	possibly not	definitely not

2. Would you ever break the law in this way?

YES _____ NO

definitely	possibly	50/50 chance	possibly not	definitely not

Appendix Table 1

Comparison of Means and Standard Deviations

of Personality Variables by Sex

	PRESENT STUDY		EYSENCK & EYSENCK	
	Mean	S.D.	Mean	S.D.
P: boys	4.35	2.97	5.03	3.26
P: girls	2.58	2.25	2.89	2.42
E: boys	18.79	3.78	19.05	3.90
E: girls	18.39	3.84	18.87	3.59
N: boys	10.29	4.40	9.97	4.94
N: girls	13.19	4.40	12.34	4.77
L: boys	4.52	3.24	4.68	3.38
L: girls	4.71	3.22	6.23	3.84
	N = 1282		N = 715	

Age	Boys	Girls	Age	Boys	Girls
13	103	59	14	243	206
14	357	202	15	148	118
15	287	177			
16	34	63			

Appendix Table 2

Means and Standard Deviations for P by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	3.56	2.41	2.69	2.66
School 2	4.21	2.84	---	---
School 3	5.36	3.35	2.33	2.61
ALL	4.35	2.97	2.58	2.25
ANOVA	P by School		F = 24.56	P $<$ .001
	P by Sex		F = 130.42	P $<$ .001

Appendix Table 3

Means and Standard Deviations for E by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	18.30	4.18	18.43	3.93
School 2	19.05	3.70	---	---
School 3	18.99	3.33	18.30	3.64
ALL	18.79	3.78	18.39	3.84
ANOVA	E by School		F = 3.19	P $<$ .05
	E by Sex		F = 3.41	

Appendix Table 4

Means and Standard Deviations for N by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	10.61	4.60	13.50	4.30
School 2	9.98	4.43	---	---
School 3	10.31	4.13	12.56	4.53
ALL	10.29	4.40	13.19	4.40
ANOVA	N by School		F = 25.05	P < .001
	N by Sex		F = 133.08	P < .001

Appendix Table 5

Means and Standard Deviations for L by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	4.20	2.99	4.35	2.95
School 2	4.95	3.31	---	---
School 3	4.32	3.35	5.45	3.62
ALL	4.52	3.24	4.71	3.22
ANOVA	L by School		F = 5.19	P < .01
	L by Sex		F = 1.09	

Appendix Table 6

P Correlated with E by School and Sex

	BOYS		GIRLS	
School 1	.1974	$P < .001$	.2273	$P < .001$
School 2	.1460	$P < .01$	---	---
School 3	.1491	$P < .05$	.3339	$P < .001$
ALL	.1693	$P < .001$	.2603	$P < .001$

Appendix Table 7

P Correlated with N by School and Sex

	BOYS		GIRLS	
School 1	.1314	$P < .05$	.0918	$P < .05$
School 2	.0377		---	---
School 3	.1799	$P < .01$	-.0030	
ALL	.1025	$P < .01$	.0671	

Appendix Table 8

P Correlated with L by School and Sex

	BOYS		GIRLS	
School 1	-.3980	P < .001	-.3978	P < .001
School 2	-.3777	P < .001	---	---
School 3	-.3094	P < .001	-.3166	P < .001
ALL	-.3441	P < .001	-.3720	P < .001

Appendix Table 9

E Correlated with N by School and Sex

	BOYS		GIRLS	
School 1	-.1888	P < .001	-.1871	P < .001
School 2	-.1240	P < .05	---	---
School 3	-.0563		-.1899	P < .01
ALL	-.1353	P < .001	-.1851	P < .001

Appendix Table 10

E Correlated with L by School and Sex

	BOYS		GIRLS	
School 1	-.1155	$P < .05$	-.2118	$P < .001$
School 2	-.1949	$P < .001$	---	---
School 3	-.1086	$P < .05$	-.2030	$P < .01$
ALL	-.1346	$P < .001$	-.2067	$P < .001$

Appendix Table 11

N Correlated with L by School and Sex

	BOYS		GIRLS	
School 1	-.1801	$P < .01$	-.0941	$P < .05$
School 2	-.0045		---	---
School 3	-.0591		.0023	
LL	-.0812	$P < .05$	-.0718	

Appendix Table 12

Factor Analysis 81 items males

Item	L	N	E	P
1	-.03	.01	.43	.05
2	-.14	.22	-.12	.00
3	-.02	.01	-.09	.39
4	-.46	.04	-.02	-.09
5	.08	-.15	.23	.11
6	-.11	.39	-.06	.09
7	-.09	-.10	.03	.50
8	.55	-.07	.02	.04
9	.06	.02	-.40	.15
10	-.07	.41	.08	.01
11	-.55	.03	.16	-.01
12	-.02	-.01	-.13	.47
13	.03	.01	.50	-.00
14	-.15	.34	±.14	.15
15	-.02	-.24	.04	.37
16	-.57	.01	.03	-.07
17	.02	-.10	.42	.00
18	-.19	.46	-.01	-.02
19	-.12	-.03	.00	.36
20	-.41	.11	.01	.01
21	.12	-.05	.30	.09
22	-.19	.46	-.01	.01
23	.13	.23	.05	.37
24	.47	-.01	.03	-.07
25	.00	-.03	.32	-.00
26	.08	.43	.02	-.13
27	.48	.16	.09	.03
28	.13	-.02	.49	.17
29	.10	.45	-.09	-.06
30	.10	.39	.17	.29
31	.56	.12	.15	-.09
32	.16	.14	.02	.39
33	-.16	.02	.34	-.16
34	-.12	.43	-.04	.05
35	-.14	.03	-.01	.46
36	.44	.02	-.04	-.03
37	.18	-.05	.34	.03
38	-.20	.36	-.01	-.17
39	.13	.15	.13	.43
40	-.50	.12	.08	-.12
41	-.01	.06	.31	-.10
42	-.01	.03	.13	.44
43	.39	.04	.04	.19
44	.11	.01	.32	-.09
45	.10	.48	-.08	-.09
46	-.30	.00	.17	.30
47	.45	-.02	.10	-.00
48	.14	-.02	-.36	.12
49	-.10	.52	-.13	.07
50	-.11	-.10	-.17	.47
51	.46	.09	-.10	-.01
52	-.16	-.04	.29	.04

Appendix Table 12 cont'd.

Item	L	N	E	P
53	-.17	.29	.18	-.02
54	.20	-.05	.10	.25
55	.48	.17	.07	-.18
56	-.05	.00	.55	-.12
57	.20	.08	.07	.41
58	-.01	-.04	.32	.07
59	.07	.46	-.12	-.07
60	.17	-.10	.10	.09
61	.01	.03	.58	-.03
62	-.10	.42	-.13	.18
63	.01	.24	.16	-.43
64	-.47	.12	.09	-.05
65	-.11	.15	.21	.06
66	-.37	.30	.06	-.01
67	-.10	.01	.31	-.05
68	.07	.57	.03	.02
69	-.33	-.05	-.01	.33
70	.05	-.04	.48	.07
71	.04	.59	-.07	.06
72	.27	.04	.08	-.29
73	.31	.08	.20	.06
74	-.02	-.01	.51	.06
75	-.46	.06	.11	-.01
76	.14	.11	.41	.13
77	-.09	.50	-.01	-.07
78	-.41	.02	.00	.31
79	.10	-.01	.31	.24
80	.09	.52	.05	-.01
81	-.14	-.10	.30	.17

Appendix Table 13

Factor Analysis 81 item females

Item	L	N	E	P
1	.02	.12	.48	-.08
2	-.18	.26	-.12	.01
3	.02	.05	.00	.29
4	-.55	-.03	-.14	-.16
5	-.01	-.10	.18	.04
6	-.12	.47	.05	.15
7	-.06	.01	.03	.40
8	.46	.03	.05	.04
9	-.07	-.08	-.45	.04
10	-.04	.42	.08	-.04
11	-.57	.02	.02	.01
12	-.04	.02	-.02	.29
13	.04	-.08	.46	.09
14	.01	.39	.04	.21
15	-.12	-.20	-.13	.28

Appendix Table 13 cont'd.

Item	L	N	E	P
16	-.55	-.03	-.05	-.09
17	-.05	.02	.47	-.12
18	-.21	.35	-.20	-.05
19	-.16	.11	.03	.12
20	-.46	.08	-.01	.01
21	.16	.07	.02	.29
22	-.11	.48	-.05	.11
23	.09	.27	-.03	.37
24	.54	-.04	.07	-.07
25	.02	-.10	.29	.11
26	.13	.56	.12	-.07
27	.40	.07	.01	.05
28	.13	-.08	.41	.22
29	-.02	.49	-.08	-.15
30	.02	.29	.15	-.32
31	.54	.08	.07	-.05
32	.04	.15	-.08	.38
33	-.06	.02	.20	-.06
34	-.13	.46	.03	.03
35	-.09	.02	.01	.48
36	.40	.11	.03	-.08
37	.01	-.07	.18	.16
38	-.18	.28	-.16	-.15
39	.13	.10	.01	.59
40	-.56	.04	-.03	-.03
41	-.04	.06	.31	-.13
42	-.00	-.03	.01	.53
43	.39	-.06	-.03	.18
44	-.23	.01	.28	-.06
45	-.01	.47	-.10	-.05
46	-.36	-.03	.13	.23
47	.44	-.02	.17	.08
48	-.02	.09	-.33	.19
49	.01	.57	-.02	.10
50	-.05	-.08	-.14	.45
51	.54	-.02	-.08	.03
52	-.22	-.05	.21	.20
53	-.28	.28	.18	-.01
54	.04	-.13	.07	.36
55	.50	.01	-.13	.05
56	.01	.12	.53	-.16
57	.03	.08	-.01	.15
58	-.24	-.10	.11	.12
59	-.02	.38	-.09	-.24
60	.20	.07	.13	.09
61	.07	.06	.50	.01
62	-.07	.52	-.04	.06
63	-.01	.22	.17	-.45
64	-.46	.11	.05	-.04
65	-.15	.03	.18	.07
66	-.34	.19	.08	-.11
67	.02	-.08	.27	.12
68	.05	.57	.06	-.11
69	-.50	-.03	.17	-.05
70	-.02	-.16	.51	.08

Appendix Table 13 cont'd

Item	L	N	E	P
71	.13	.55	-.14	.01
72	.25	.19	.11	-.30
73	.27	.13	.24	-.02
74	-.06	.05	.49	-.02
75	-.50	.12	.05	.04
76	.04	.16	-.44	.04
77	-.22	.37	-.09	-.03
78	-.47	.04	.09	.14
79	-.15	-.10	.44	.01
80	.01	.60	.11	-.11
81	-.36	.02	.25	.09

Appendix Table 14

ANTISOCIAL BEHAVIOUR QUESTIONNAIRE 55-ITEMS

PERCENT RESPONSES FOR BOYS BY SCHOOL

Order of Items on Questionnaire	ITEMS	SCHOOL 1 (N = 253)	SCHOOL 2 (N = 292)	SCHOOL 3 (N = 236)
21	Using swear words	96.0	90.4	92.8
2	Riding a bicycle without lights after dark	83.4	85.6	84.7
18	Trespassing	79.1	80.8	84.7
37	Dropping rubbish on the ground	80.6	77.1	86.4
41	Playing practical jokes	87.7	75.0	79.2
7	Moving about the classroom without permission	73.9	64.0	79.2
48	Knocking on doors and running away	58.1	70.9	80.9
8	Being cheeky to a teacher	70.0	58.9	74.6
39	Stealing fruit from a garden or orchard	59.3	71.6	70.3
25	Being late for school	69.2	59.9	66.9
29	Shouting in lessons	64.4	56.8	71.6
28	Cheating by copying in a test	64.8	61.6	62.7
3	Travelling on a bus or train without paying full fare	71.5	46.2	64.4
16	Going into a pub or buying alcohol	63.2	51.4	62.7
27	Not wearing proper clothing for P.E.	57.3	50.0	69.9
42	Deliberately staying out late	47.0	59.2	61.0
13	Stealing school property	56.9	44.5	58.9
1	Letting off fireworks in the street	36.8	53.8	68.6
50	Gambling in school	43.5	57.5	50.8
23	Being cheeky to strangers	46.2	45.9	55.1
31	Throwing stones at people	37.5	48.6	56.4
9	Stealing things from shops	44.7	45.5	51.3
10	Breaking windows in empty houses	36.4	44.5	59.7
47	Damaging school property	54.9	35.3	50.4
20	Buying or swopping stolen articles	37.2	44.9	55.1
49	Smoking cigarettes	43.9	51.7	35.2
40	Damaging other people's property	49.8	31.8	41.1
26	Refusing to do schoolwork or homework	36.4	33.6	48.3
19	Turning over bins or breaking bottles in the street	25.3	37.0	55.9
44	Damaging flowers in a park or garden	30.4	37.7	44.1
35	Buying cigarettes to smoke yourself	30.8	43.2	36.0
24	Getting into fights	37.2	33.6	36.9
6	Going to an 'X' film under age	30.4	31.8	44.1
34	Riding illegally on the back of a motorbike	21.3	36.6	47.0
46	Getting someone in trouble or ganging up on them	34.0	31.5	37.3
43	Stealing anything from another boy or girl	34.8	28.4	39.4
17	Swearing at a teacher	28.5	29.5	40.7
30	Stealing money	31.2	30.8	30.8
14	Causing damage in public places	23.3	29.5	37.7
4	Smoking during school hours	21.3	38.0	27.1
38	Stealing things from home	35.2	31.8	19.5
12	Driving a car, motorbike or scooter illegally	23.7	28.4	33.5
15	Carrying a weapon in case needed in a fight	21.7	27.7	31.8
5	Staying away from school without permission	12.3	26.4	41.5

cont'd.

Appendix Table 14 cont'd.

Order of Items on Questionnaire	ITEMS	SCHOOL 1 (N = 253)	SCHOOL 2 (N = 292)	SCHOOL 3 (N = 236)
11	Belonging to a group that goes around making a row	21.7	20.9	34.3
33	Making a serious phone call as a joke	16.2	20.2	30.5
54	Stealing goods or money from machines	12.3	21.2	27.5
55	Using a weapon in a fight	17.2	23.8	24.1
22	Breaking into private property to steal something	7.1	14.7	14.8
32	Hitting a teacher	2.0	8.9	18.6
53	Taking and keeping a pedal cycle	.4	7.2	15.3
51	Taking a car or motorbike for joyriding	.4	5.8	12.3
45	Obtaining money by threatening others	4.7	6.2	6.8
52	Planning ahead, breaking in, and stealing valuables	1.2	5.1	5.1
36	Taking drugs	.4	2.7	5.1

Appendix Table 15

P Correlated with ASB by School and Sex

	BOYS		GIRLS	
School 1	.5408	$P < .001$	.5987	$P < .001$
School 2	.4971	$P < .001$	---	---
School 3	.6625	$P < .001$	.5632	$P < .001$
ALL	.5790	$P < .001$	.5875	$P < .001$

Appendix Table 16

E Correlated with ASB by School and Sex

	BOYS		GIRLS	
School 1	.2846	$P < .001$	.4098	$P < .001$
School 2	.3298	$P < .001$	---	---
School 3	.3022	$P < .001$	.4009	$P < .001$
ALL	.3060	$P < .001$	.4049	$P < .001$

Appendix Table 17

N Correlated with ASB by School and Sex

	BOYS		GIRLS	
School 1	.1786	$P < .01$	.1109	$P < .05$
School 2	.0229		---	---
School 3	.1382	$P < .05$	.0425	
ALL	.0997	$P < .01$	.0933	$P < .05$

Appendix Table 18

L Correlated with ASB by School and Sex

	BOYS		GIRLS	
School 1	-.5937	$P < .001$	-.5531	$P < .001$
School 2	-.5720	$P < .001$	---	---
School 3	-.5405	$P < .001$	-.6702	$P < .001$
ALL	-.5603	$P < .001$	-.6031	$P < .001$

Appendix Table 19

FACTOR ANALYSIS SUMMARY	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6	FACTOR 7	FACTOR 8	FACTOR
	(Only to be read horizontally)								
J.E.P.Q. (81 items)	P	N	E	L					
ASB (55 items)	General criminality - serious crime	Smoking	Minor crimes: petty theft and general misbehaviour	Stealing	Breaking school rules	Destroying public property	Breaking age restriction rules e.g. pub & cinema	Fighting	Breaking school rules against teachers
RISK PERCEPTION TEST (slides)	Criminality	Thrill seeking	Premeditation	Stealing from shops	Risk perception for serious crimes	Risk perception for petty crimes	Premeditation for car theft		
BEHAVIOUR PREDICTION QUESTIONS	Criminal propensity	Risk perception							
RISK PERCEPTION AND BEHAVIOUR PREDICTION TESTS	Minor crime	Thrill seeking	Premeditation	Serious Crime	Verbal risk: Behaviour Prediction	Perceptual risk: slides	Petty risk (minor crime)	Premeditation for car theft	Premeditation for serious crime
STEREOTYPING TEST (male figures)	Antisocial behaviour	Self concept	Sexual	Old	Stays out late	Likes parties			
STEREOTYPING TEST (female figures)	Antisocial	Self	Sexual	Introverted	Old/Young				

Appendix Table 19 cont'd.

FACTOR ANALYSIS SUMMARY	FACTOR 10	FACTOR 11
ASB (55 items)	Disruptive school behaviour	Drugs

Appendix Table 20

Total Subjects Percent Responses
by Model for Each Concept

	FEMALE MODELS						MALE MODELS					
Concept	1	2	3	4	5	6	1	2	3	4	5	6
C1	8.6	8.4	72.4	6.9	2.2	1.5	17.8	56.2	3.1	1.7	16.1	5.1
C2	31.1	14.6	23.6	17.3	8.5	4.9	50.8	19.2	5.0	3.7	9.3	12.1
C3	3.4	10.6	2.9	2.2	64.8	16.1	1.7	4.4	55.1	1.2	27.9	9.7
C4	21.6	11.1	7.3	44.0	4.3	12.0	53.6	9.0	2.8	24.7	3.5	6.2
C5	12.8	14.6	40.8	8.1	19.5	4.2	25.5	34.5	16.3	7.8	10.7	5.2
C6	3.4	28.6	11.7	3.3	21.3	31.4	1.4	2.9	21.5	3.0	21.6	49.7
C7	12.2	21.5	4.2	14.8	12.9	34.5	11.2	5.7	16.8	17.0	26.4	22.9
C8	26.2	9.6	28.3	7.1	23.5	5.4	29.0	29.5	19.3	5.3	8.4	8.6
C9	15.4	19.3	36.3	20.3	7.0	1.6	36.4	35.6	7.6	11.0	4.7	4.7
C10	33.9	13.4	10.2	33.2	4.1	5.3	55.5	8.5	1.7	22.4	3.9	8.1
C11	22.9	21.6	21.9	18.4	8.6	6.6	43.5	16.4	6.3	8.9	6.7	18.2
C12	30.7	16.3	9.3	33.3	3.4	6.9	60.1	9.0	2.7	14.9	2.7	10.6
C13	8.3	18.6	5.4	5.7	20.7	41.3	5.1	3.8	24.6	4.0	22.1	40.4
C14	17.6	25.4	26.5	23.9	4.1	2.6	46.4	27.7	4.0	13.0	3.5	5.5
C15	29.5	18.9	7.3	30.4	4.0	9.9	56.5	8.4	4.0	15.2	3.2	12.7
C16	28.4	12.1	21.3	9.7	20.0	8.5	33.4	23.9	20.1	6.5	6.6	9.4
C17	30.6	17.8	6.2	35.4	2.7	7.4	58.9	4.6	1.6	21.5	2.6	10.8

Appendix Table 21

Stereotyping Percent Responses for the
Male Models by Girls and Boys

	GIRLS						BOYS					
Concept	1	2	3	4	5	6	1	2	3	4	5	6
C1	20.8	62.1	2.6	.5	9.9	4.2	15.9	52.4	3.4	2.5	20.1	5.7
C2	52.1	22.5	4.9	1.6	8.3	10.6	50.0	17.1	5.1	5.1	9.8	13.0
C3	.3	1.3	58.0	1.8	28.5	10.1	2.7	6.4	53.1	.8	27.5	9.4
C4	61.1	6.0	1.3	21.5	2.1	8.0	49.2	11.0	3.7	26.6	4.4	5.1
C5	46.4	28.5	13.2	4.4	5.2	2.3	11.9	38.4	18.4	10.0	14.1	7.1
C6	.3	2.1	20.7	2.3	23.1	51.6	2.2	3.4	22.0	3.4	20.6	48.5
C7	5.4	4.4	18.9	13.5	33.4	24.4	15.1	6.6	15.4	19.1	21.8	22.0
C8	41.1	28.1	15.9	3.7	5.6	5.6	21.6	30.4	21.6	6.3	10.0	10.5
C9	44.6	33.2	6.0	8.8	4.4	3.1	31.2	37.3	8.6	12.4	4.7	5.8
C10	57.5	10.6	1.0	21.8	3.6	5.4	54.1	7.1	2.2	22.8	4.1	9.8
C11	44.3	21.2	7.8	6.0	5.2	15.5	43.0	13.3	5.4	10.8	7.8	19.7
C12	63.0	10.9	1.0	12.8	2.3	9.9	58.2	7.8	3.7	16.4	2.9	11.1
C13	3.1	2.3	25.1	2.6	22.0	44.8	6.4	4.7	24.3	4.9	22.3	37.4
C14	48.2	32.1	3.1	11.7	1.8	3.1	45.4	24.8	4.6	13.8	4.4	7.1
C15	55.3	10.1	4.9	13.8	3.4	12.5	57.3	7.3	3.4	16.2	3.0	12.8
C16	43.2	19.6	19.4	5.8	5.8	6.1	27.2	26.7	20.6	6.9	6.9	11.5
C17	59.8	4.9	.8	22.8	2.6	9.1	58.2	4.4	2.2	20.7	2.5	12.0

Appendix Table 22

Stereotyping Percent Responses for the
Female Models by Girls and Boys

	GIRLS						BOYS					
Concept	1	2	3	4	5	6	1	2	3	4	5	6
C1	6.0	8.1	75.8	6.5	2.1	1.6	10.3	8.6	70.2	7.1	2.4	1.5
C2	29.1	11.9	28.8	16.4	10.4	3.4	32.4	16.4	20.1	17.9	7.3	5.9
C3	3.1	13.0	1.3	1.3	62.4	18.9	3.5	9.1	3.9	2.9	66.3	14.3
C4	23.3	7.3	6.7	45.1	4.4	13.2	19.9	13.7	7.8	43.2	4.2	11.3
C5	16.6	5.7	35.3	11.4	29.1	1.8	10.3	20.3	44.4	5.9	13.3	5.7
C6	2.3	38.6	8.0	2.3	19.7	29.0	4.1	22.6	14.2	3.9	22.5	32.8
C7	10.1	26.5	2.6	8.3	8.1	44.4	13.5	18.2	5.2	19.1	16.0	27.9
C8	28.3	5.5	23.3	7.3	31.4	4.2	24.8	12.3	31.5	6.9	18.2	6.2
C9	12.7	16.1	39.7	22.9	7.8	.8	17.2	21.5	34.0	18.8	6.4	2.2
C10	30.8	15.3	13.2	33.9	3.4	3.4	35.8	12.1	8.3	32.7	4.6	6.6
C11	19.9	24.6	31.1	14.0	6.5	3.9	24.8	19.7	15.9	21.2	9.9	8.4
C12	30.4	16.4	15.8	30.1	2.3	4.9	30.9	16.4	5.1	35.4	4.0	8.3
C13	7.8	23.8	3.4	4.7	13.5	46.9	8.6	15.0	6.8	6.4	25.5	37.7
C14	17.1	21.3	31.9	22.9	4.7	2.1	17.9	28.0	22.9	24.9	3.7	2.9
C15	28.6	21.6	10.4	26.0	4.2	9.4	29.9	17.3	5.2	33.3	3.9	10.3
C16	34.7	6.1	15.5	10.3	24.5	8.9	24.3	16.1	25.1	9.4	17.0	8.1
C17	36.3	16.6	7.0	32.6	1.8	5.7	26.7	18.6	5.8	37.2	3.2	8.5

Appendix Table 23

Correlations with "Like I Am" for Boys
on Extreme Groups of P, E, N, L and ASB

Concept	+P	-P	Sign.	+E	-E	Sign.	+N	-N	Sign.
1. Likes Parties	-.0178	-.0177		.0149	-.1103		-.0185	.0059	
2. Out Late	.1209	-.1383	P<.05	.1072	.0288		.0299	.0629	
3. Clever	-.1208	.2108	P<.05	-.0632	.0663		.0397	.0963	
4. Young	.0506	.2501		.1143	.1213		.1182	-.0142	
5. Good Looking	.1897	.0814		.2365	.1551		-.0079	.1710	
6. Old	-.1855	-.0360		-.1371	-.1334		-.1483	-.0797	
7. Has Few Friends	-.0599	.0540		-.1373	.1432	P<.05	-.0989	-.0045	
8. Like I Will Be	.3869	.4532		.4335	.4580		.3458	.4960	
9. Likes Kissing	.1008	.0384		.1801	-.0078		-.0113	.1012	
10. Takes Risks	.1706	-.1053	P<.05	.2320	-.0689	P<.05	-.0088	.0181	
11. Smokes	.1462	-.1136	P<.05	.0515	-.0942		.0180	-.0087	
12. Gets In Trouble	.0522	.0865		.0689	-.0445		.1172	-.0608	
13. Stays Home	-.3321	-.1886		-.1192	-.0786		-.0149	-.1731	
14. Sex	.1899	.0012		.1518	-.0262		-.0618	.0135	
15. Steals	.0312	-.0420		.0442	-.1160		-.0665	-.0892	
17. Fights	.0956	-.1931	P<.05	.0314	-.1389		-.0391	-.0999	
	P > 5	P < 2		E > 20	E < 18		N > 14	N < 10	
	(N = 146)	(N = 101)		(N = 220)	(N = 193)		(N = 111)	(N = 268)	

Appendix Table 23 (cont'd.)

Correlations with "Like I Am" for Boys
on Extreme Groups of P, E, N, L and ASB

Concept	+L	-L	Sign.	+ASB	-ASB	Sign.
1. Likes Parties	.0051	-.0299		-.0351	.0235	
2. Out Late	.0012	.0432		.1848	-.0228	
3. Clever	.0837	-.0598		-.0749	.1244	
4. Young	.1027	.2202		.1726	.0955	
5. Good Looking	.0493	.1410		.1107	.0799	
6. Old	.0047	-.2475		-.1653	-.0684	
7. Has Few Friends	.0628	-.2257	P<.05	-.0845	-.0068	
8. Like I Will Be	.4656	.2738		.3427	.4802	
9. Likes Kissing	.1028	.1450		.1831	-.1079	P<.05
10. Takes Risks	-.1095	.2497	P<.05	.1948	-.0576	P<.05
11. Smokes	-.1075	.0530		.0952	-.1821	P<.05
12. Gets In Trouble	-.1386	.0457		-.0053	-.1321	
13. Stays Home	-.0683	-.0992		-.2309	-.0187	
14. Sex	-.0405	-.0903		.1072	-.0556	
15. Steals	-.1383	.0978		.0973	-.1573	P<.05
17. Fights	-.1529	-.1375		.0703	-.2388	P<.05
	L > 6	L < 2		ASB > 26	ASB < 14	
	(N = 145)	(N = 87)		(N = 182)	(N = 150)	

Appendix Table 24

Correlations with "Like I Am" for Girls
on Extreme Groups of P, E, N, L and ASB

Concept	+P	-P	Sign.	+E	-E	Sign.	+N	-N	Sign.
1. Likes Parties	.3555	-.0141	P<.05	.2559	.0422		.1362	.0098	
2. Out Late	.4520	.0393	P<.05	.2823	-.1408	P<.05	.1241	.0098	
3. Clever	-.0048	.0676		-.0734	.0648		-.0356	.0355	
4. Young	.1029	-.0069		.1908	-.0295		-.0006	.1616	
5. Good Looking	.4507	.3393		.3644	.1092	P<.05	.1546	.2649	
6. Old	-.0901	-.0777		-.0929	-.0015		-.0567	-.1035	
7. Few Friends	-.1050	-.0039		-.2213	-.0029		-.1070	-.1276	
8. Like I Will Be	.5881	.4263		.4267	.4448		.3525	.5357	
9. Likes Kissing	.4770	.0216	P<.05	.1730	.0052		.1644	-.0785	
10. Takes Risks	.3915	-.1206	P<.05	.1739	.0873		.1286	.0542	
11. Smokes	.0849	-.0087		.0050	-.0928		.0742	.0156	
12. Gets In Trouble	.1181	-.0821		-.1330	.0624		.0708	-.2627	P<.05
13. Stays Home	-.1129	.1238		-.3067	-.0184	P<.05	-.1321	-.0307	
14. Sex	.4406	.0565	P<.05	.1852	.0074		.1364	.1341	
15. Steals	-.0293	-.2734		-.1221	-.1601		-.1253	-.1893	
17. Fights	-.1132	-.2252		-.0505	-.1782		-.0883	-.1870	
	P > 5	P < 2		E > 20	E < 18		N > 14	N < 10	
	(N = 47)	(N = 145)		(N = 135)	(N = 126)		(N = 179)	(N = 81)	

Appendix Table 24 (cont'd.)

Correlations with "Like I Am" for Girls
on Extreme Groups of P, E, N, L and ASB

Concept	+L	-L	Sign.	+ASB	-ASB	Sign.
1. Likes Parties	-.0545	.1238		.4118	-.0815	P<.05
2. Out Late	-.1039	.2355	P<.05	.2971	-.0625	P<.05
3. Clever	.0239	.0305		-.0185	-.0940	
4. Young	-.1611	.1757	P<.05	.1347	-.1238	
5. Good Looking	.2348	.2034		.4161	.2262	
6. Old	-.0753	-.0410		-.1193	-.1372	
7. Few Friends	.2155	-.1943	P<.05	-.2460	.0143	
8. Like I Will Be	.5487	.3745		.5884	.5193	
9. Likes Kissing	-.0485	.2087		.2756	-.1594	P<.05
10. Takes Risks	-.1077	.0579		.2032	-.0410	
11. Smokes	.0235	.1297		.2897	-.0075	P<.05
12. Gets In Trouble	-.0895	-.0243		.0342	-.1558	
13. Stays Home	-.0219	-.3713	P<.05	-.2848	-.0163	
14. Sex	.0203	.2686		.3507	.0008	P<.05
15. Steals	-.2432	-.0761		.0248	-.2342	
17. Fights	-.3562	-.0067	P<.05	.1479	-.2617	P<.05
	L > 6	L < 2		ASB>26	ASB<14	
	(N = 81)	(N = 62)		(N = 70)	(N = 124)	

Appendix Table 25

Means and Standard Deviations for R1 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	2.41	1.02	2.29	1.04
School 2	2.77	.96	---	---
School 3	2.85	1.09	2.86	.93
ALL	2.68	1.04	2.47	1.04
	ANOVA	R1 by School	F = 36.46	P < .001
		R1 by Sex	F = 11.67	P < .001

Appendix Table 26

Means and Standard Deviations for R2 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	3.96	.76	4.05	.77
School 2	3.96	.83	---	---
School 3	3.83	.95	3.92	.81
ALL	3.92	.85	4.01	.79
	ANOVA	R2 by School	F = 3.67	P < .05
		R2 by Sex	F = 3.69	

Appendix Table 27

Means and Standard Deviations for R3 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	3.55	.80	3.63	.82
School 2	3.31	.88	---	---
School 3	3.69	.86	3.68	.80
ALL	3.50	.86	3.68	.80
	ANOVA	R3 by School	F = 21.73	P < .001
		R3 by Sex	F = 13.87	P < .001

Appendix Table 28

Means and Standard Deviations for R4 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	3.98	.82	4.27	.78
School 2	4.26	.89	---	---
School 3	4.06	.95	4.21	.82
ALL	4.11	.85	4.25	.79
	ANOVA	R4 by School	F = 2.70	
		R4 by Sex	F = 7.89	P < .01

Appendix Table 29

Means and Standard Deviations for R5 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	4.15	.82	4.43	.77
School 2	4.01	.95	---	---
School 3	4.35	.94	4.20	.91
ALL	4.16	.91	4.35	.83

ANOVA	R5 by School	F = 12.03	P < .001
	R5 by Sex	F = 15.11	P < .001

Appendix Table 30

Means and Standard Deviations for R6 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	3.83	.74	3.99	.76
School 2	4.03	.83	---	---
School 3	3.84	.89	3.88	.81
ALL	3.91	.83	3.96	.78

ANOVA	R6 by School	F = 4.04	P < .05
	R6 by Sex	F = 1.04	

Appendix Table 31

Means and Standard Deviations for ThS1 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	3.76	1.15	3.99	1.00
School 2	3.67	1.08	---	---
School 3	3.83	1.19	3.76	1.02
ALL	3.75	1.14	3.91	1.01
	ANOVA	ThS1 by School	F = 4.09	P < .05
		ThS1 by Sex	F = 6.81	P < .01

Appendix Table 32

Means and Standard Deviations for ThS2 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	2.23	1.19	2.45	1.14
School 2	2.16	1.22	---	---
School 3	2.17	1.27	2.59	1.28
ALL	2.19	1.22	2.50	1.19
	ANOVA	ThS2 by School	F = 2.82	
		ThS2 by Sex	F =20.07	P < .001

Appendix Table 33

Means and Standard Deviations for ThS3 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	2.01	.99	2.21	.97
School 2	2.42	1.19	---	---
School 3	2.29	1.22	2.35	1.13
ALL	2.25	1.15	2.26	1.03

ANOVA	ThS3 by School	F = 7.98	P < .001
	ThS3 by Sex	F = .02	

Appendix Table 34

Means and Standard Deviations for ThS4 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	2.74	1.31	2.94	1.24
School 2	2.80	1.40	---	---
School 3	3.41	1.40	3.33	1.23
ALL	2.97	1.40	3.07	1.25

ANOVA	ThS4 by School	F = 23.22	P < .001
	ThS4 by Sex	F = 1.74	

Appendix Table 35

Means and Standard Deviations for ThS5 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	2.01	1.08	2.29	1.16
School 2	2.27	1.25	---	---
School 3	2.37	1.47	2.55	1.24
ALL	2.22	1.28	2.37	1.20

ANOVA	ThS5 by School	F = 5.74	P < .01
	ThS5 by Sex	F = 4.89	P < .05

Appendix Table 36

Means and Standard Deviations for ThS6 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	1.42	.86	1.57	.99
School 2	1.57	1.05	---	---
School 3	1.67	1.26	2.06	1.26
ALL	1.55	1.07	1.72	1.09

ANOVA	ThS6 by School	F = 11.33	P < .001
	ThS6 by Sex	F = 7.50	P < .01

Appendix Table 37

Means and Standard Deviations for Pre1 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	2.08	1.19	2.08	1.14
School 2	2.48	1.30	---	---
School 3	2.66	1.43	2.93	1.24
ALL	2.40	1.33	2.36	1.24
ANOVA	Pre1 by School		F = 36.69	P < .001
	Pre1 by Sex		F = .36	

Appendix Table 38

Means and Standard Deviations for Pre2 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	3.29	1.30	2.99	1.18
School 2	3.45	1.24	---	---
School 3	3.72	1.24	3.62	1.17
ALL	3.48	1.27	3.20	1.21
ANOVA	Pre2 by School		F = 24.69	P < .001
	Pre2 by Sex		F = 15.53	P < .001

Appendix Table 39

Means and Standard Deviations for Pre3 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	3.56	1.12	3.59	1.04
School 2	3.50	1.13	---	---
School 3	3.75	1.13	3.87	.98
ALL	3.60	1.13	3.68	1.03
	ANOVA	Pre3 by School	F = 7.48	P < .001
		Pre3 by Sex	F = 1.88	

Appendix Table 40

Means and Standard Deviations for Pre4 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	3.04	1.33	3.04	1.25
School 2	3.56	1.29	---	---
School 3	3.65	1.27	3.67	1.10
ALL	3.41	1.32	3.25	1.24
	ANOVA	Pre4 by School	F = 33.87	P < .001
		Pre4 by Sex	F = 5.22	P < .05

Appendix Table 41

Means and Standard Deviations for Pre5 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	3.99	1.09	3.93	.95
School 2	3.96	1.05	---	---
School 3	4.20	1.07	4.22	.94
ALL	4.04	1.07	4.03	.96
	ANOVA	Pre5 by School	F = 8.39	P < .001
		Pre5 by Sex	F = .09	

Appendix Table 42

Means and Standard Deviations for Pre6 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	4.87	.56	4.83	.53
School 2	4.72	.72	---	---
School 3	4.81	.69	4.68	.71
ALL	4.80	.67	4.78	.60
	ANOVA	Pre6 by School	F = 4.80	P < .01
		Pre6 by Sex	F = .15	

Appendix Table 43

Means and Standard Deviations for C1 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	2.79	1.35	2.49	1.36
School 2	2.91	1.39	---	---
School 3	3.22	1.39	2.15	1.28
ALL	2.96	1.39	2.38	1.34
	ANOVA	C1 by School	F = 4.43	P < .05
		C1 by Sex	F = 54.99	P < .001

Appendix Table 44

Means and Standard Deviations for C2 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	1.29	.70	1.10	.38
School 2	1.47	.97	---	---
School 3	1.47	.93	1.10	.42
ALL	1.41	.88	1.10	.40
	ANOVA	C2 by School	F = 15.20	P < .001
		C2 by Sex	F = 54.87	P < .001

Appendix Table 45

Means and Standard Deviations for C3 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	2.26	1.23	1.87	1.19
School 2	2.32	1.39	---	---
School 3	2.74	1.51	1.72	1.18
ALL	2.42	1.39	1.82	1.19
ANOVA	C3 by School		F = 7.34	P < .001
	C3 by Sex		F = 63.48	P < .001

Appendix Table 46

Means and Standard Deviations for C4 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	1.39	.83	1.23	.66
School 2	1.56	1.07	---	---
School 3	1.78	1.21	1.09	.36
ALL	1.57	1.06	1.17	.58
ANOVA	C4 by School		F = 10.87	P < .001
	C4 by Sex		F = 59.65	P < .001

Appendix Table 47

Means and Standard Deviations for C5 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	1.35	.78	1.17	.56
School 2	1.50	1.01	---	---
School 3	1.45	.94	1.12	.41
ALL	1.44	.92	1.15	.51
ANOVA	C5 by School		F = 10.37	P < .001
	C5 by Sex		F = 41.09	P < .001

Appendix Table 48

Means and Standard Deviations for C6 by School and Sex

	BOYS		GIRLS	
	Mean	S.D.	Mean	S.D.
School 1	1.17	.55	1.12	.47
School 2	1.30	.81	---	---
School 3	1.38	.97	1.10	.11
ALL	1.28	.79	1.08	.39
ANOVA	C6 by School		F = 5.70	P < .01
	C6 by Sex		F = 25.99	P < .001

Appendix Table 49

Smoking Items Correlated with P, E, N & L
for Boys and Girls

	BOYS			GIRLS		
	Item 4	Item 35	Item 49	Item 4	Item 35	Item 49
P	.263	.283	.225	.422	.350	.340
E	.141	.138	.114	.232	.215	.228
N	.082	.098	.063	.091	.066	.080
L	-.216	-.275	-.288	-.215	-.214	-.242

Appendix Table 50

Stealing Items Correlated with P, E, N & L
for Boys and Girls

BOYS

	9	13	30	38	39	43	51	52	53	54
P	.229	.301	.269	.199	.229	.330	.246	.139	.260	.324
E	.125	.086	.069	.028	.188	.068	.097	.004	.072	.131
N	.048	.099	.093	.148	-.067	.089	.040	.058	.054	.020
L	-.288	-.378	-.276	-.224	-.321	-.453	-.061	-.012	-.063	-.208

GIRLS

	9	13	30	38	39	43	51	52	53	54
P	.265	.286	.239	.213	.195	.206	.036	-.034	.034	.247
E	.215	.172	.020	.044	.271	.075	-.006	-.085	-.015	.112
N	.023	.110	.071	.139	.059	.072	.076	.067	.088	.029
L	-.253	-.398	-.205	-.239	-.381	-.181	.037	.149	.101	-.158

Appendix Table 51

Fighting Items Correlated with P, E, N & L
for Boys and Girls

BOYS

	Item 11	Item 15	Item 24	Item 31	Item 32	Item 45
P	.410	.344	.314	.251	.333	.207
E	.215	.164	.155	.145	.157	.065
N	.071	.088	.070	-.007	-.012	.013
L	-.274	-.195	-.236	-.123	-.308	-.091

GIRLS

	Item 11	Item 15	Item 24	Item 31	Item 32	Item 45
P	.357	.334	.418	.126	.253	.076
E	.197	.133	.190	.104	.190	-.004
N	.049	.130	.046	-.011	.005	.088
L	-.187	-.142	-.208	-.006	-.138	.003

Appendix Table 52

Smoking Items Correlated with Risk for all Subjects

	R1	R2	R3	R4	R5	R6	RP1	RP2
Item 4	.031	-.035	-.061	-.022	-.157	.004	-.073	-.129
Item 35	.029	.010	-.038	-.001	-.124	.020	-.070	-.100
Item 49	-.023	-.013	-.058	-.011	-.086	.012	-.125	-.086

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